AMERICAN AGRICULTURIST

FOR THE

Farm, Garden, and Household.

"AGRICULTURE IS THE MOST HEALTHFUL, MOST USEFUL, AND MOST NOBLE EMPLOYMENT OF MAN."—WASHINGTON.

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HEAD OF JERSEY BULL "WACHUSETT."—DRAWN FROM LIFE BY EDWIN FORBES.—*Engraved for the American Agriculturist.*

This picture is a portrait of a very fine Jersey bull; in fact, one at least of the finest ever bred in this country. His color is French gray and black, shaded on the back into reddish brown, with all the black points so much sought after and admired by high-fanciers of this breed of cattle. Wachusett was bred by J. P. Swain, Esq., of Bronxville, N. Y., one of the oldest and most careful and observant breeders in the country. He has imported a large number of very fine animals from the Channel Islands, both Jersey and Guernsey, and has a thorough understanding of their characteristics and good qualities; and in his opinion Wachusett will compare favorably with any Jersey bull that can be shown here or elsewhere. At two years old he was a terror not only to evil-doers, but to all strangers, but now at four years old he is much more quiet, and his keeper fondles him like a kitten. The good qualities of the Jerseys and Guernseys consist of richness of milk, which in the proportion of cream excels that of all other breeds, averaging in a small herd, which we have tested with the lactometer 22 per cent. Wachusett was purchased for an *American Agriculturist* premium in 1867, and is now owned by L. A. Chase

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A Triangular Harrow.—A correspondent sends us a drawing and description of a triangular harrow which he has constructed. It does not differ essentially from the well-known Geddes harrow. For a heavy harrow, and for working among stumps, the triangular form has manifest advantages.

Calendar for June.

Day of Month.	Day of Week.	Boston, N. England, N. York State, Michigan, Wisconsin, Iowa, and Oregon. Sun rises.	Sun sets.	Mo'n sets.	N. Y. City, Ct. Philadelphia, New Jersey, Penn., Ohio, Indiana, and Illinois. Sun rises.	Sun sets.	Mo'n sets.	Washington, Maryland, Virginia, Kentucky, Missouri, and California. Sun rises.	Sun sets.	Mo'n sets.
		H. M	H. M	H. M.	H. M	H. M	H. M.	H. M	H. M	H. M.
1	T	4 25	7 30	3 25	4 31	7 24	3 28	4 36	7 19	3 30
2	F	4 25	7 30	rises	4 30	7 25	rises	4 36	7 19	rises
3	S	4 25	7 31	8 17	4 30	7 26	8 12	4 36	7 20	8 7
4	S	4 24	7 32	9 25	4 30	7 26	9 20	4 35	7 21	9 15
5	M	4 24	7 32	10 26	4 29	7 27	10 20	4 35	7 21	10 15
6	T	4 24	7 33	11 15	4 29	7 28	11 10	4 35	7 22	11 5
7	W	4 23	7 33	11 52	4 29	7 28	11 49	4 34	7 23	11 44
8	T	4 23	7 34	morn	4 29	7 29	morn	4 34	7 23	morn
9	F	4 23	7 35	0 25	4 28	7 30	0 23	4 34	7 24	0 20
10	S	4 23	7 36	0 52	4 28	7 30	0 50	4 34	7 24	0 48
11	S	4 22	7 36	1 17	4 28	7 31	1 17	4 34	7 25	1 16
12	M	4 22	7 37	1 41	4 28	7 31	1 41	4 34	7 25	1 42
13	T	4 22	7 37	2 4	4 28	7 32	2 5	4 34	7 26	2 7
14	W	4 22	7 38	2 28	4 28	7 32	2 31	4 34	7 26	2 33
15	T	4 22	7 38	2 57	4 28	7 32	3 0	4 34	7 26	3 4
16	F	4 22	7 38	sets	4 28	7 33	sets	4 34	7 27	sets
17	S	4 22	7 39	7 25	4 28	7 33	7 20	4 34	7 27	7 14
18	S	4 22	7 39	8 19	4 28	7 33	8 13	4 34	7 28	8 7
19	M	4 22	7 39	9 9	4 28	7 34	9 3	4 34	7 28	8 57
20	T	4 23	7 40	9 52	4 29	7 34	9 47	4 34	7 28	9 42
21	W	4 23	7 40	10 31	4 29	7 34	10 26	4 34	7 28	10 22
22	T	4 23	7 40	11 5	4 29	7 34	11 1	4 35	7 28	10 58
23	F	4 23	7 40	11 35	4 29	7 34	11 32	4 35	7 29	11 30
24	S	4 23	7 40	morn	4 29	7 35	morn	4 35	7 29	11 59
25	S	4 24	7 41	0 2	4 30	7 35	0 1	4 35	7 29	morn
26	M	4 24	7 41	0 29	4 30	7 35	0 28	4 36	7 29	0 28
27	T	4 24	7 41	0 55	4 30	7 35	0 56	4 36	7 29	0 57
28	W	4 25	7 40	1 23	4 29	7 35	1 25	4 37	7 29	1 27
29	T	4 25	7 40	1 56	4 29	7 35	1 59	4 37	7 29	2 3
30	F	4 26	7 40	2 34	4 29	7 35	2 39	4 37	7 29	2 43

PHASES OF THE MOON.

MOON.	BOSTON.	N. YORK.	WASH'N.	CHA'STON	CHICAGO.
	D. H. M.	H. M.	H. M.	H. M.	H. M.
Full.....	3 1 43 m.	1 31 m.	1 19 m	1 7 m.	0 37 m.
3d Quart..	9 7 53 ev.	7 41 ev.	7 29 ev.	7 17 ev.	6 47 ev.
New Moon	17 9 45 ev.	9 33 ev.	9 21 ev.	9 9 ev.	8 39 ev.
1st Quart.	25 6 0 ev.	5 48 ev.	5 36 ev.	5 24 ev.	4 54 ev.

AMERICAN AGRICULTURIST.

NEW YORK, JUNE, 1871.

We have had a remarkably favorable and early spring for getting in wheat, barley, oats, and peas, and it is probable that an unusually large breadth of wheat and oats have been sown. For a year or two past oats have proved a more profitable crop than barley, and many farmers who usually sow barley have this year sown oats instead. In the great spring wheat sections of Wisconsin, Illinois, and Minnesota, the crop was sown unusually early and in good condition, and the prospects, so far, are highly favorable for a large yield. As a rule, also, winter wheat looks well.

The early spring has given farmers an unusually long season for plowing; and the presumption is that they have availed themselves of it, and that a large area has been, or will be, planted to corn and potatoes. It is true that high wages have induced a good many farmers to leave their operations. But on the whole we can hardly doubt that a large breadth has been planted, and that the cultivation and harvesting will require as much labor as hitherto, and consequently high wages must still be paid. The country will prosper, though those who work for farmers will do better than the farmers themselves. And there is no remedy for this unsatisfactory condition of affairs except in better farming—that is, in raising as much grain on half a million acres as we now do on a million.

Hints about Work.

Corn.—Small early varieties may still be planted. Soak the seed in soft water for 24 hours, and if the ground is warm, moist, and mellow, the plants will be up in a few days. The great business of the corn-grower this month is to cultivate, cultivate, cultivate. Something may still be done by applying plaster, or plaster, ashes, and hen-dung, mixed, on the young plants in the hill; but the main reliance now is on the cultivator. There was much sod land plowed early this spring for corn, and not a little of it was planted while the soil was cold and sodden underneath. In such cases a good crop can only be expected by deep and thorough cultivation. And the implement should be of the best kind—one that will not slip over the hard spots. Many are not sufficiently careful on this latter point. The loose soil that needs the least cultivation gets the most, while the clay spots that need the most get the least. It cannot be too often repeated that there is an immense advantage in starting the cultivator the moment the rows can be distinguished. If necessary, set the cultivator very narrow, and go only once in a row, and as deep as it can be run without tearing up the sod too much. In a few days run closer to the plants; and if the rows are not absolutely straight, it may be necessary, in order to get closer to the plants, to go twice in a row. Less hoeing and more cultivating should be the motto of the corn-grower. Clean and thorough cultivation will often add one-third to the yield of the corn, and the land will be in far better condition for the following crops of grain and grass.

Potatoes.—We believe in early planting, especially for Peachblows and other late-growing varieties. But we have had good crops of Flukes and other early kinds planted as late as the first week in June. Where potatoes were planted early and deep, a harrow run over the land just as the potatoes are breaking the crust, will destroy millions of small weeds without pulling up one potato in a thousand. The cultivator should be used as early, as deep, and as frequently as possible, and continued until there is danger of disturbing the roots or tubers.

Plaster or *Gypsum* may still be sown with advantage on clover, corn, peas, etc. Where the sowing costs more than the plaster, put on two or three bushels per acre; but when plaster is dear, we should not sow more than a bushel per acre.

Beans.—Drill in the beans on good, clean land, or on clover sod, 2½ feet apart, and 10 inches apart in the rows, and say 4 beans in a hill; or drill in the beans 2 or 3 inches apart in the rows. The latter plan sometimes gives the largest yield, but it is more work to hoe and pull the crop. Beans may be sown as late as the middle of the month, but the earlier in the month the better.

Root Crops.—If not already sown, beets, mangels, parsnips, and carrots should be put in at once. It is a waste of labor and expense to sow any of these crops, except the land is rich, clean, and mellow. Mangels will produce an immense quantity of valuable food per acre, but they require the richest of land. A good plan is to mark off the rows 27 inches apart (or the width of the wagon wheels), and ridge up the land, and then put 25 or 30 loads of well-rotted manure per acre in the rows, spreading it evenly and breaking up the lumps; then split the rows and cover up the manure; then roll down the ridges and drill in the seed, at the rate of 5 lbs. per acre. As soon as the plants can be seen, run the cultivator between the rows, and thin out the plants a foot apart. Many of the English growers prefer to dibble in the seed 15 inches apart, putting two or three seeds in each hill. This is done to save labor in hoeing. And it has another advantage—you can soak the seed for 24 or 36 hours before planting, thus gaining several days the start of the weeds.

Ruta-bagas need not be sown before the middle or end of the month. Same preparation as for mangels. Never sow them broadcast. Let the land be clean, mellow, and rich, and drill in the seed at the rate of 2 lbs. per acre, on the fresh-stirred, moist soil. Thin out to 10 inches or a foot apart. There is no remedy for the fly. Thick seeding, and pushing the plants rapidly forward by the use of superphosphate, will greatly lessen the chances of injury. On a small scale, something may be done by dusting slaked lime or plaster on and under the plants when the dew is on. Plaster is good for the crop, and lime will not hurt it.

Corn for soiling.—Select land near the barn-yard, and make it as rich as possible. It cannot be too rich. Never sow this crop broadcast. Prepare the land, and mark it one way as for other corn; then drill in the seed, at the rate of 4 bushels per acre; or if you have no drill, plow out a shallow furrow, and sow the seed in the furrow—say a pint to fifteen or twenty yards. Keep the land clean and mellow by the frequent use of the cultivator.

Peas.—In sections where the "bug" affects the peas, it is sometimes customary to sow this crop the first or second week in June. The bug seldom attacks crops sown so late. But the yield is usually small.

Summer-fallows for Wheat.—On clover sod, not over three years old, a summer-fallow on clay ground is the best of all preparations for wheat. Break up the soil early in June. Harrow thoroughly, and continue to harrow or cultivate sufficiently to kill weeds; then cross-plow in July, and harrow, cultivate, and roll. Plow again the last of August, and drill in the wheat. Some farmers break up the land in June, and do not plow again, depending on the frequent use of the cultivator and harrows to keep down the weeds. On light, loamy soil, such treatment does very well; but heavy soil should be plowed twice or three times. An old, tough sod, broken up in June, does not make a good fallow for wheat. Better fallow it for oats, or break it up early in the fall, and plant corn in the spring.

Weeds.—If not already done, pull out red-root from winter wheat. Spud the thistles; pull docks after a soaking rain, while the ground is loose. Attend to the weeds in the fence corners and along the ditches, and around stone heaps, and suffer none to go to seed. The oftener thistles and other weeds can be mown in pastures, the better. The weeds generally rob us of half our profits, and often take the whole. Declare a war of extermination. Give up the silly notion that weeds cannot be killed and go at the business with energy and promptness, and success will attend him who perseveres. Recollect that it is the last blow that kills. If you stop short of this, your labor is thrown away.

Horses.—Feed liberally and regularly, and groom thoroughly. Do not work them too many hours. From 7 A. M. until 11:30 A. M., and from 1:30 P. M. to 6 P. M., if kept steadily at work, is long enough. Let them rest in the stable and not in the field. Give cut feed and allow them plenty of time to digest it. Nearly all our horse complaints come from indigestion—and this arises very frequently from working too hard and too soon after eating.

Working Oxen differ essentially from horses in their digestive organs. The horse has but one stomach and that a very small one, while the ox has four, and one of these is capable of carrying a large quantity of food that the ox can bring up and eat at his leisure. Oxen may be worked for this reason far more hours than a horse without injury; neither do they require such rich food. If they are allowed too much grain or meal, much of it is voided undigested. Feed them all they will digest, but it is a waste to give more. It is well to work them earlier and later than horses, and let them rest in the shade during the extreme heat of the day. They should be well cleaned every day with currycomb and brush.

The Dairy.—Let everything about the dairy be done with unvarying regularity and with scrupulous cleanliness. Tolerate no noise, harsh words or rough treatment. Never hurry or run the cows, or excite them in any way. Milk with a steady, unceasing flow, and leave not a drop in the udder. Next to liberal feed, pure water and clean milking, we place in importance, *petting the cows.* A dairy farmer must be a *gentleman.* And the *cows* like to see a kind-hearted, sensible woman in the yard or stable at milking time! Let every dairy utensil be *scalded* every day. Mere washing in warm water will not answer. The water must be *boiling hot.* Nearly all the trouble of the butter not coming, bad flavor, etc., arises from ignorance of or inattention to the necessity of having the water boiling hot. A dirty vessel dipped in boiling hot water for a minute or two is far better than one that has been washed perfectly clean in merely warm water, but not scalded. The hot water penetrates into every pore or crack, and destroys the germs of the fungus that produces the mischief.

Sheep.—Tag all that need it, and wash the sheep as soon as the water is warm, but not earlier. Attend to the washing yourself and recollect that it will be better (at least for the sheep) to allow the washers more warm coffee than whiskey. A little grain for a week or ten days before and after washing, will do much to prevent the sheep from taking cold—and it will start the oil sooner after washing, and they can be sheared earlier. If a shearer is rough with the sheep, kick him out of the barn—figuratively, of course. Fat, long-wooled sheep should be fasted a few hours before shearing. Look out for foot-rot. On the first symptom of lameness, separate the lame sheep, and dress the feet of the *whole flock* with a strong solution of carbolic acid. There is nothing better than carbolic acid to cure the foot-rot, and nothing so good as a preventive. Lambs troubled with ticks should be dipped in a weak solution of carbolic acid—say a gallon of the crude acid to twenty gallons of water.

Swine.—Spring pigs intended for the butcher next winter should be favored in the distribution of the milk, and should have nearly as much corn or cornmeal as they will eat, with a few hours' run every day, if possible, in a good clover pasture. If intended to be kept until eighteen months old, it will not be necessary to give so much grain. If of a good breed they will thrive well on clover, and a pint of corn each, per day, increasing the quantity as they get older. Fall pigs should have the same treatment, with the exception of being allowed more corn. In our experience there is no way of making cheaper or better pork than allowing well-bred, *early* fall pigs that have been well wintered, to have the run of a good clover pasture and a liberal allowance of corn during the summer and autumn. See that all the pigs have abundance of fresh water. If any are taken sick separate them from the rest of the herd. Some farmers say if they feed corn to pigs in summer they eat but little clover. This is because the corn is not fed regularly, and the pigs are constantly expecting the corn. Feed regularly night and morning, and none at any other time, and you will have no trouble.

Haying.—Clover will be ready to cut towards the last of the month. See that everything is ready.

Implements and Machines.—We probably shall not need sleighs before next winter! And it would be well to stow them away under cover for the summer. And so with all other tools and machines that will not be needed until winter. Wagons, cultivators, harrows, plows, and other implements in constant use, should be kept housed as much as possible—or failing in this, wash or paint them with crude petroleum. Never use an implement or machine without first seeing that all the bolts are tight. Do not run a wagon with a loose tire.

A Grindstone with a treadle, or better still, one which can be run by horse-power, is indispensable to good farm management. A dull scythe, a blunt spade, and above all, a dull, rusty hoe, absorb many hours of hard labor. Better grind a hoe all away in a season than use it dull for two days.

Work in the Horticultural Departments.

The abundant work which the month of June brings is amply rewarded by the many beautiful flowers which the warm days bring forth, and the harvest is also a great attraction, the beginning of which will appear in the shape of the strawberries, soon followed by the other small fruits. Seeds, if sown now in the well warmed soil, will germinate very rapidly, and a good crop of most varieties of vegetables may still be obtained this season.

Orchard and Nursery.

Trees set this spring will need constant care in rubbing off all buds that start from the trunk, and are not wanted for limbs: if trees become bent by strong winds they must be tied up to stakes or else reset. Young trees may be successfully transplanted a short distance, even when in full leaf, if the roots are not dried by the sun.

Pruning.—This month is preferred by many for pruning bearing orchards. Cover the wounds with shellac varnish.

Thinning, though seldom practised on large trees is of great benefit, as the tree will continue in bearing longer, and the fruit is much finer.

Cultivation.—All young orchards do better if the ground is kept cultivated, and if any crop is raised between the rows, supply a plenty of manure.

Seed-beds of evergreens and other forest trees will need attention; they ought to be kept free from weeds and furnished with a shading of laths to protect them from the sun.

Insects.—Look out for insects of all kinds. When the tent caterpillars appear, destroy their nests.

Curculio.—The best remedy for the curculio is to place a sheet under the trees and shake the insects into it, when they can be collected and destroyed.

Slugs, upon pear and other trees, may be killed by dusting the leaves with lime, ashes or dry earth.

Fruit Garden.

Strawberries ought to be mulched now, if not already done, to prevent the growth of weeds as well as to keep the fruit free from dirt. If the hay or straw used in mulching can be run through a hay cutter, it forms a better material than when uncut. Plants set this spring ought not to be allowed to bear until the next season.

Grape-vines set this season should be allowed to grow but one shoot. Rub off all other buds and keep the single shoot tied up to a stake. Young bearing vines should not ripen more than two bunches to a shoot, as the quality of the fruit will then be much better. Wherever mildew makes its appearance use sulphur, applied by a bellows.

Currants ought to be heavily mulched, as it saves a time in hoeing during the busy season.

Raspberries.—Allow only three or four canes to grow to each stool, unless it is desired to propagate the variety.

Blackberries.—Canes must not be allowed to grow more than four or five feet; the pinching induces the growth of side shoots, and these should be stopped when eighteen inches in length.

Kitchen Garden.

Weeds will require the constant use of the hoe and rake, and if attended small it requires much less time to destroy them than when they are older. Where the rows are wide enough to admit the cultivator, the horse can be used with good effect.

Seeds.—Many seeds require to be sown this month for a succession, as well as for late planting.

Asparagus may be cut until green peas are ready for the table; stop cutting, and spade in a dressing of manure between the rows.

Beans.—Bush varieties may still be planted for late crops, and the Limas started in the hot-bed may be set out. Put poles to all running varieties.

Beets must be thinned out as soon as they are two or three inches high; the thinnings may be used for greens; many prefer them to Spinach.

Cabbages from cold-frame plants will be ready for market this month. Set out plants from the seed-beds. Seed of late varieties for winter use may be sown. The Savoy or Curled varieties are much superior to the other sorts for home use.

Carrots need great care in weeding, and those sown early need to be thinned out. Seed may still be sown early this month and make a good crop.

Cauliflowers.—Set out plants in fine, rich soil, and keep well hoed.

Celery may be planted on ground from which early cabbages were taken. The plants in the seed beds ought not to become drawn, but set out when two or three inches high in another bed, or where they are to grow.

Corn.—Plant early varieties for use late in the fall, and keep that already up free from weeds. Plant a few rows of the pop-corn.

Cucumbers.—Set out plants started in the hot-bed, and keep free from insects by the use of ashes or dust sprinkled upon the plants when covered with dew.

Egg-Plants need a rich, warm soil; they amply

repay a liberal supply of manure, and a watering of liquid manure once a week is of great advantage.

Lettuce.—Transplant from the seed-beds; seed may be sown in a cool and partially shady spot.

Melons need the same care as cucumbers.

Onions need a great deal of attention in weeding. A push-hoe is a very useful implement to loosen the soil and destroy the weeds. Give the bed a dressing of salt or ashes.

Parsnips must be kept clear of weeds until the tops cover the ground. Seeds planted early this month will give a fair crop in most localities.

Peas may yet be planted for late use, though they are usually affected by mildew. Ground from which the early sorts have been removed can be planted with cabbages or celery.

Radishes can be sown now for late use, though they are usually tough and stringy put in so late.

Rhubarb should not be cut severely after the small fruits begin to ripen, but allowed to rest; give a supply of manure; keep all flower-stalks cut.

Ruta-bagas.—Sow this month, and when the plants are well up, dust with ashes to keep off insects.

Salsify, if sown now, will produce fair roots, but not so large as that sown earlier; the treatment is the same as for carrots.

Spinach.—Spade up the ground where the early crop has been taken off, and if the soil is not too dry, sow a bed for late use; the later sown crop is very liable to run to seed. New Zealand spinach is the best for late.

Sweet Potatoes should be planted on ridges as recommended last month. Keep the ground clear of weeds.

Tomatoes.—Set out plants and keep them well cultivated and clear of worms.

Flower-Garden and Lawn.

The cultivator is supplied with plenty of flowers from the garden, but weeds also make their appearance in great numbers, requiring constant care to keep them down. The lawn needs to be cut at least once a week, and if weeds make their appearance, destroy as soon as seen.

Bulbs which have finished flowering ought to be taken up and put away in a dry place, and the ground occupied by bedding plants or annuals.

Annuals.—Those sown in the seed-beds must be transplanted into fine, rich soil.

Herbaceous Perennials may be set out early this month, if not already done; divide and reset those that have done blooming.

Tie up all plants which need support, and supply neat labels to all requiring them.

Greenhouse and Window Plants.

Plants which are to remain in the greenhouse during the summer require shading, and this is best furnished by whitewashing the glass.

Azaleas and Camellias ought to be put out in a shady place, and if they can be plunged in the soil, it will save a great deal of time in watering during hot weather.

Insects must be destroyed whenever they attack plants in the greenhouse.

Soil.—Now is the time to prepare a stock of soil for use next winter and spring. Pile up sods, and if possible, empty house slops upon the heap turning it over once in two or three weeks.

Commercial Matters—Market Prices.

Gold has been quoted firmer, since our last, on a more active inquiry, chiefly for Custom House and export purposes. The quotation, May 15, was 111⅜....The Breadstuff movement has been up to a fair average, though checked by the break in the Erie Canal, near Rochester, which delayed the arrival of fresh supplies from the Lakes. The receipts by rail have been quite liberal of Wheat and Corn, though moderate of other articles. The home trade demand has been good, though mostly in a jobbing way. The export call has been mainly for Wheat, Corn, and low grades of Flour. Prices have been variable, but close steadily, as a rule. The advance in ocean freights has been against the export movement. ....Cotton has been more active, closing strong and buoyant in price....There has been a moderate business reported in Provisions, generally at lower rates....Wool has been offered sparingly and has been in fair request at firmer prices.....Hay has been in better supply and quoted cheaper, on a moderate trade. Straw has been scarce and in demand at an advance....Hops and Seeds have been quiet....Tobacco has been rather more sought after at our quoted rates.

The following condensed, comprehensive tables, carefully prepared specially for the *American Agriculturist*, show at a glance the transactions for the month ending May 15, 1871, and for the corresponding month last year.

1. TRANSACTIONS AT THE NEW-YORK MARKETS.

RECEIPTS.	*Flour.*	*Wheat.*	*Corn.*	*Rye.*	*Barley.*	*Oats.*
25 days *this* m'th.	225,000	875,000	664,000	26,000	129,000	147,000
26 days *last* m'th.	261,000	473,000	827,000	13,000	121,000	293,000
SALES.	*Flour.*	*Wheat.*	*Corn.*	*Rye.*	*Barley.*	*Oats.*
25 days *this* m'th.	234,000	1,517,000	1,281,000	31,000	216,000	908,000
26 days *last* m'th.	283,000	1,413,000	1,336,000	25,000	297,000	795,000

2. *Comparison with same period at this time last year.*

RECEIPTS.	*Flour.*	*Wheat.*	*Corn.*	*Rye.*	*Barley.*	*Oats.*
25 days 1871	225,000	875,000	664,000	26,000	129,000	147,000
25 days 1870	231,000	986,000	243,500	12,500	139,000	230,000
SALES.	*Flour.*	*Wheat.*	*Corn.*	*Rye.*	*Barley.*	*Oats.*
25 days 1871	254,000	1,517,000	1,281,000	31,000	216,000	908,000
25 days 1870	243,000	2,414,000	1,170,000	26,000	151,000	1,206,000

3. *Exports from New York, Jan. 1 to May 15:*

	Flour.	*Wheat.*	*Corn.*	*Rye.*	*Barley.*	*Oats.*
1871	670,233	3,641,590	1,748,021	17,338	77,902	12,541
1870	633,515	4,003,651	119,022	6,709	——	1,087
1869	337,389	2,643,860	1,173,235	——	——	39,583
1868	319,202	1,708,175	2,909,014	153,093	——	36,469

4. *Stock of grain in store at New York.*

1871.	*Wheat,* bush.	*Corn,* bush.	*Rye,* bush.	*Barley,* bush.	*Oats,* bush.	*Malt,* bush.
May 9	283,700	259,245	160,734	50,725	376,226	171,933
April 10	811,871	180,947	150,964	164,393	709,363	171 897
March 13	1,523,785	204,388	150,514	329,319	1,133,897	218,231
Feb. 13	2,203,677	311,471	148,193	481,863	1,409,995	215,124
Jan. 16	3,685,116	272,618	157,730	554,491	1,736,936	216,394
1870.						
Dec. 15	3,009,762	208,319	148,069	500,397	2,085,437	231,129
Nov. 9	2,092,900	300,000	116,800	400,400	2,125,000	——
Oct. 10	1,809,921	476,544	53,391	184,803	1,679,658	237,453
Sept. 12	1,387,487	761,891	50,869	107,474	1,053,079	180,881
Aug. 8	1,438,876	589,973	25,437	106,101	691,566	119,046
July 11	1,281,913	483,540	28,816	98,600	655,068	109,478
June 7	706,478	69,845	21,891	94,630	488,143	108,775
May 10	1,158,052	110,829	20,502	126,043	440,517	83,000
April 11	1,845,186	285,946	23,249	187,172	756,811	99,998

CURRENT WHOLESALE PRICES.

	April 15.			May 15.		
PRICE OF GOLD		110½			111⅜	
FLOUR—Super to Extra State	$6 15	@	7 25	5 40	@	7 00
Super to Extra Southern	6 00	@	11 00	5 65	@	9 75
Extra Western	6 50	@	10 00	6 00	@	9 75
Extra Genesee	7 25	@	9 00	7 00	@	8 75
Superfine Western	6 15	@	6 55	5 40	@	5 90
RYE FLOUR	4 25	@	6 15	4 20	@	6 10
CORN-MEAL	3 50	@	4 45	3 25	@	4 20
WHEAT—All kinds of White	1 65	@	2 00	1 80	@	1 90
All kinds of Red and Amber	1 45	@	1 70	1 32½	@	1 62
CORN—Yellow	78	@	80	81	@	83
Mixed	75	@	78	79	@	82
OATS—Western	66	@	71	65	@	70
State	67½	@	70	67½	@	69
RYE	95	@	1 18	1 05	@	1 21
BARLEY	85	@	1 18	75	@	1 20
HAY—Bale, ₱ 100 lbs	1 15	@	1 50	1 00	@	1 45
STRAW, ₱ 100 lbs	75	@	1 35	80	@	1 65
COTTON—Middlings, ₱ lb	14¾	@	15½	15¾	@	16⅝
HOPS—Crop of 1870, ₱ lb	6	@	12	6	@	12
FEATHERS—Live Geese, ₱ lb	65	@	75	65	@	75
SEED—Clover, ₱ lb	10	@	10⅜	9⅛	@	9⅜
Timothy, ₱ bushel	6 25	@	6 50	3 50	@	4 00
Flax, ₱ bushel	2 15	@	2 25	2 12½	@	2 20
SUGAR—Brown, ₱ lb	7⅝	@	10¼	8⅜	@	10¾
MOLASSES, Cuba, ₱ gal	20	@	45	20	@	45
COFFEE—Rio, (Gold, in bond)	10	@	13½	10	@	13½
TOBACCO, Kentucky, &c., ₱ lb	6	@	11	5¼	@	11
Seed Leaf, ₱ lb	13	@	70	13	@	70
WOOL—Domestic Fleece, ₱ lb	45	@	57	47	@	57
Domestic, pulled, ₱ lb	25	@	43	28	@	52
California, unwashed	26	@	33	20	@	38
TALLOW, ₱ lb	8¾	@	9	8½	@	9
OIL-CAKE—₱ ton	39 50	@	42 50	39 50	@	42 50
PORK—Mess, ₱ barrel	19 50	@	19 75	17 00	@	17 25
Prime, ₱ barrel	16 75	@	17 25	14 00	@	15 00
BEEF—Plain mess	10 00	@	15 00	10 00	@	15 00
LARD, in tres. & barrels, ₱ lb	10½	@	11¾	10¼	@	11½
BUTTER—State, ₱ lb	15	@	43	12	@	35
Western, ₱ lb	12	@	33	10	@	28
CHEESE	5	@	16	8	@	15
BEANS—₱ bushel	75	@	3 20	75	@	3 10
PEAS—Canada, free, ₱ bu	1 50	@	1 55	1 40	@	1 45
EGGS—Fresh, ₱ dozen	14	@	17	15	@	17
POULTRY—Dressed Fowls	15	@	18	16	@	17
Turkeys, dressed, ₱ lb	15	@	18	16	@	17
Geese, ₱ lb	12	@	16	13	@	16
Ducks, ₱ pair	1 00	@	1 25	1 00	@	1 25
POTATOES, ₱ bbl	3 00	@	6 50	3 00	@	5 50
SWEET POTATOES, ₱ bbl	4 00	@	5 00	4 00	@	5 00
TURNIPS—₱ bbl	1 00	@	1 25	75	@	1 25
CABBAGES—₱ 100	6 00	@	15 00	5 00	@	13 00
ONIONS—₱ bbl	3 00	@	—	—	@	—
CRANBERRIES—₱ bbl	5 00	@	9 00	3 00	@	6 00
BROOM-CORN—₱ lb	4	@	8	4	@	8
APPLES—₱ barrel	1 50	@	6 00	1 25	@	4 75

New-York Live-Stock Markets.

WEEK ENDING.	*Beeves.*	*Cows.*	*Calves.*	*Sheep.*	*Swine.*	*Tot'l.*
April 17th	5,226	65	3,543	15,055	9,415	33,304
April 24th	7,687	51	3,648	13,644	13,610	38,640
May 1st	7,514	74	3,963	17,050	18,405	47,011
May 8th	6,644	83	5,283	19,664	15,515	47,189
May 15th	7,886	88	4,876	18,373	20,296	51,418
Total in 5 Weeks	34,957	361	21,298	83,686	77,241	217,542
do. *for prev. 4 Weeks*	24,998	346	7,059	77,962	51,908	162,273
Average per Week	6,991	72	4,259	16,737		15,448
do. do. *last Month*	6,249	86	1,765	19,490		12,977
do. do. *prev's Month*	5,843	69	915	20,070		12,356
Average per Week, 1870.	6,847	97	2,240	28,151		17,108
Average per Week, 1869.	6,275	92	1,752	28,836		15,348
do. do. do. 1868	5,733	105	1,588	27,182		18,809
do. do. do. 1867	5,544	64	1,320	22,154		28,605
do. do. do. 1866	5,748	94	1,200	20,000		13,000
do. do. do. 1865	5,255	118	1,500	16,091		11,023
Total in 1869	326,280	4,827	91,083	1,499,500		798,199
Total in 1868	298,123	5,466	82,571	1,413,479		978,061
Total in 1867	293,832	3,369	69,911	1,174,154		1,102,643
Total in 1866	298,880	4,885	62,420	1,040,000		672,000
Total in 1865	270,274	6,161	71,991	836,733		573,190
Total in 1864	267,609	7,603	75,621	782,462		660,277

Beef Cattle.—With an average of 742 more cattle per week than were received the previous month, and 881 above the average for the corresponding period of 1870, the market rules weak, and prices have a downward tendency. The fine corn crop of last year at the West, now shows itself upon the stock coming forward. There are abundance of ripe cattle without waiting for the grass to fatten them. In fact, it is a common remark among butchers that cattle never did so well at this season of the year. There is one great drawback to the butcher, however, and that is the low price of rough fat, so that the more a bullock has, the more are the other portions reduced in value. High prices are not looked for this spring. Taken as a whole, the market does not differ materially from what it was five weeks ago, only we are not getting so poor cattle as were then sent in. Even the Texans are fat, and the scallawag, State, dry cows, old oxen and stags, are kept at home, as it does not pay to send them here.

Below we give the range of prices, average price, and figures at which large lots were sold:

Apr. 17th, ranged	11	@15½c.	Large sales	12½	@14	c. Av. 13½
do. 24th,	do.	10¾@15½c.	do.	dc.	13 @14	c. do. 13½
May 1st,	do.	11 @15	c. do.	do.	12½@13¾c.	do. 13¾
do. 8th,	do.	11¾@15	c. do.	do.	13 @14	c. do. 13¾
do. 15th,	do.	11 @15	c. do.	do.	13 @13¾c.	do. 13¾

Milch Cows.—The offerings of fresh cows and springers have been light, the demand not calling for them. Trade has ruled very dull until within the past week, when it has picked up a little. If only good cows were sent here, they would sell, but the stock runs very poor. The presumption is that good cows are wanted at home for the opening of the butter and cheese season, while nearly worthless stock is sent here for sale. Common cows are quoted at $50@$60 each; medium to good, $70@$80, with a few prime at $90@$1.00.....**Calves.**—Here we have a great increase in numbers, the present being the season of their greatest abundance. The arrivals would be still larger but for the low rates which induce farmers to hold them back. Those known as "buttermilk calves" will only sell at 4@6c. per lb., live weight, while fair to good calves from Central N. Y., bring 7@8c., and those from near the city, 8@9c. A pen of 92 State calves, 127 lbs., just sold at 7¼c....**Sheep and Lambs.**—Spring lambs are now coming forward in considerable quantities; and have declined from 18 to 20c. per lb., to 12@15c., some poor ones selling still lower. There is not much difference in the price of sheep, from what they were quoted last month. Nearly all the stock is now shorn. Wool skins help materially to sell a lot of sheep, the pelts being in good demand. Ordinary to fair sheared sheep sell at 5@6¼c. per lb., live weight, good to prime at 6½@7c., with a few extras at 7¼c. Lambs are quoted at 11@15c.—the latter price for 55@60 lb. Jersey stock....**Swine.**—Receipts have been unusually large for the spring months, and trade has dragged heavily at constantly declining rates. Most of the hogs are first killed and then sold, but live hogs are worth 5⅜@5¾c., with city slaughtered at 7@7¾c., being a falling off of 1c. per lb. during the month.

The Dollar Steam-Engine—Give it to the Boys!—In a former paper, we described and illustrated this useful toy, and strongly commended it, after a trial of a few weeks. After a much longer experience, we can still more strongly commend it, not only for small boys, but for grown up ones, too. We confess to having played with it not a little ourselves, and to have helped our boys to add sundry little mechanical contrivances. It is a perfect little engine that will not only go itself, but has power enough to drive other toys. It gives pleasure to the operator, while it conveys instruction and develops mechanical skill. As previously announced, we have secured a supply for premiums, one being given for three subscribers to *American Agriculturist*, at $1.50 each a year, or for two subscribers to *Hearth and Home*, at $3 each a year. And to make it more convenient, we will, for a month or two, give one of the engines for one subscriber to each of the papers, at $4.50 a year for the two. It will be mailed anywhere in the United States and Territories if 36 cents be sent for purpose of postage. Any subscriber, however, can have one for $1.60 at the Office, or have one mailed, postpaid, to his address for $1.36. Nothing is needed to set the engine in motion after it arrives but to put water in the boiler, and a little alcohol for the lamp under it.

AMERICAN AGRICULTURIST.

ANNUAL SUBSCRIPTION TERMS (always in advance): $1.50 each for less than four copies: Four to nine copies, $1.25 each: Ten to nineteen copies, $1.20 each: Twenty copies and upward, $1 each. Papers are addressed to each name.

HEARTH AND HOME: $3 a year for less than four copies: Four to nine copies, $2.75 each; Ten to nineteen copies, $2.50 each; and twenty or more copies, $2.25 each.

Both Papers sent to one address for $4.00 a year.

ORANGE JUDD & Co., Publishers, 245 Broadway, N. Y. City.

LAST CALL.

Close Up the Ranks.

* * * * * * * * * * * * *

26 26

TWENTY-SIX DAYS.

26 26

* * * * * * * * * * * * *

N. B.—The General Premium List will be withdrawn at the end of June, which leaves *twenty-six* more working days to fill up Premium Clubs under way, and to open and complete *new* lists.

N. B.—A few days grace will be allowed for those living at a distance, so as to place all canvassers on a par.

N. B.—In hundreds of cases a few more names will fill out a list partly made up already, and secure a valuable premium. **This month** is the time to do it.

N. B.—We are anxious to have all who have worked for Premiums, receive some reward—and though we can not vary from our general offers, we hope all who have uncompleted lists will fill them this month, even though it be a loss for us to have them do so.

N. B.—Our Premium Secretary has a record of every name sent by any person for a premium list, and can tell at a glance just how each canvasser's list stands.

N. B.—N. B.—Last June many *new* premium clubs were formed, and the premiums secured. It can be **readily done this year.** In several cases, such large premiums as the Cyclopedia, etc., have been obtained in four to six days of canvassing.

N. B.—N. B.—N. B.—*About one subscriber a day* (or evening) for June, will secure any one of several large, valuable premiums. See numbers 1—2—16—18—19—35—43—48—51—53—58—72—73—81—83, and 89....A few more names will secure Nos. 33—42—54—76—84—85—90.

N. B.—N. B.—N. B.—*About half a subscriber a day* (or evening), that is one once in two days, for June, will secure Nos. 5—15—17—22—23—24—26—27—28—31—57—68, or 69.....A few extra names will secure Nos. **14**—18—19—**36**—47—50—**55**—56—**62**—65—70—71, etc.

N. B.—N. B.—N. B.—*About two subscribers a week* will secure Nos. 6—7—10—20—21—49—59 and **102**....*About one subscriber a week* will secure one of several good articles, such as Nos. 8—9—11—29—63—64 and **101.**

N. B.—IMPORTANT.—About half the above number of subscribers for **Hearth and Home,** will secure the same result—or part for one paper and part for the other.

N. B.—CONCLUSION.—Read last few paragraphs, and try your hand at it this month. The premiums are first-rate—they are ready for you—and you can get them with a little effort, this month!....**TRY IT.**

Explanatory Notes.

Read and carefully Note the following Items: (*a*) All subscribers sent by one person count, though from one or a dozen different Post-offices. But....(*b*) Tell us with each name or list of names sent, that it is for a premium....(*c*) Send the names as fast as obtained, that the subscribers may begin to receive the paper at once. You can have all of this month (June), to fill up your list....(*d*) Send the exact money with each list of names, so that there may be no confusion of money accounts....(*e*) Old and new subscribers all count in premium clubs, but a portion, at least, should be new names; it is partly to get these that we offer premiums to canvassers.....(*f*) Specimen Numbers, Cards, and Show-bills will be supplied free as needed by canvassers, but they should be used carefully and economically, as they are very costly....(*g*) Remit money in Checks on New-York Banks or Bankers, payable to order of Orange Judd & Co., or send Post-office Money Orders. If neither of these is obtainable, Register Money Letters, affixing stamps both for the postage and registry; put in the money and seal the letter in the presence of the Postmaster, and take his receipt for it. Money sent in any of the above ways is at our risk.

☞ **Full Descriptions of the Premiums sent free to ALL Applicants.**

[In the following table is given the price of each article, and the number of subscribers required to get it *free*, at the regular rates, $1.50 and $3.00 a year, for the two papers; also at the club rates of $1 and $2.50.]

N. B.—*In all Premium Clubs for either paper, TWO copies of American Agriculturist at $1.50 each, and ONE copy of Hearth and Home at $3.00, will count exactly the same. So also* **two** *copies of American Agriculturist at $1 each, and* **one** *copy of Hearth and Home at $2.50, will count exactly the same. In this way Premium Clubs can be made up from the right-hand, or from the left-hand columns below, or partly of both, only excepting Premium No. 39.*

Table of Premiums and Terms, For American Agriculturist, and for Hearth and Home, for the Year 1871.

Open to all—No Competition.

No.	Names of Premium Articles.			Price of Premiums.	American Agriculturist. Number of Subscribers required at $1.50	at $1.	Or Hearth and Home. Number of Subscribers required at $3.00	at $2.50
1	*Knives and Forks (Patterson Bros.)*			$14 00	21	70	11	35
2	*Knives and Forks*	(do.	do.)	$18 50	27	90	14	45
3	*Knives and Forks*	(do.	do.)	$22 00	33	110	17	55
4	*Knives and Forks*	(do.	do.)	$25 50	39	124	20	62
5	*Carver and Fork*	(do.	do.)	$5 00	13	37	7	19
6	*Fluted Steel*	(do.	do.)	$2 50	6	25	3	13
7	*French Cook's Knife, Fork, and Steel*			$3 00	8	30	4	15
8	*Pocket Knife*	(Smith & Clark)		$1 50	4	....	2	....
9	*Pocket Knife*	(do.	do.)	$2 00	5	22	3	11
10	*Pocket Knife*	(do.	do.)	$2 50	6	25	3	13
11	*Ladies' Pocket Knife*	(do.	do.)	$2 00	5	22	3	11
12	*Tea Set Hart's best Silver-plated*			$50 00	66	225	33	113
13	*Casters and Fruit Basket*	(do.	do.)	$30 00	44	140	22	70
14	*Cake Basket,*	(do.	do.)	$12 00	19	65	10	33
15	*Revolving Butter Cooler,*	(do.	do.)	$8 00	16	52	8	26
16	*Ice or Water Pitcher*	(do.	do.)	$18 00	27	90	14	45
17	*One Dozen Teaspoons*	(do.	do.)	$6 00	15	45	8	28
18	*One Dozen Tablespoons*	(do.	do.)	$12 00	19	65	10	33
19	*One Dozen Table Forks*	(do.	do.)	$12 00	19	65	10	33
20	*Child's Cup*	(do.	do.)	$2 75	7	27	4	14
21	*Gold Pen, Sil. Case (George F. Hawkes)*			$3 25	8	30	4	15
22	*Gold Pen and Silver Case,*	(do.	do.)	$5 00	12	37	6	19
23	*Gold Pen, Handle gold-tipped,*	(do.	do.)	$6 00	13	37	7	19
24	*Ladies' Gold Pen and Rubber Case*	(do.	do.)	$6 00	13	37	7	19
25	*Lozo Pendulum Board*			$10 00	18	58	9	29
26	*Amusette*			$6 00	13	37	7	19
27	*Garden Seeds for a Family (40 kinds).*			$5 00	12	33	6	17
28	*Flower Seeds for a Family (100 kinds).*			$5 00	12	33	6	17
29	*Garden Seeds & Flower Bulbs (Selection)*			$2 00	5	22	3	11
30	*Nursery Stock (any kinds desired)*			$20 00	30	97	15	49
31	*Set of Field Croquet*			$8 00	16	52	8	26
32	*Sewing Machine (Grover & Baker)*			$55 00	60	240	30	120
33	*Sewing Machine (Florence)*			$63 00	70	275	35	138
34	*Sewing Machine (Willcox & Gibbs)*			$55 00	60	240	30	120
35	*Washing Machine (Doty's)*			$14 00	21	70	11	35
36	*Clothes Wringer (Lest—Universal)*			$10 00	18	58	9	29
37	*Melodeon, 4-octave (G.A. Prince & Co.'s)*			$67 00	78	295	29	148
38	*Melodeon, 5-octave*	(do.	do.)	$112 00	158	400	69	200
39	*Piano, Splendid 7-oct. (Steinway & Sons)*			$625 00	820	1250	260	250
40	*Silver Watch (American Watch Co.)*			$40 00	50	150	25	75
41	*Ladies' Fine Gold Watch (Am. Watch Co.)*			$100 00	110	350	55	175
42	*Frank Wesson's Breech-loading Rifle*			$50 00	44	140	22	70
43	*Breech-loading Pocket Rifle*			$16 00	24	80	12	40
44	*Maynard's Combination Gun*			$55 00	60	240	30	120
45	*Double Bbl. Gun, (Cooper, Harris & H.)*			$30 00	46	150	23	75
46	*Tool Chest (Patterson Bros.)*			$45 00	60	190	30	95
47	*Case of Mathematical Instruments*			$9 00	18	55	9	28
48	*Case of Mathematical Instruments*			$15 00	22	75	11	38
49	*Charles Pratt's Astral Oil (1 can, 5 Gal.)*			$4 00	9	32	5	16
50	*Barometer (Woodruff's Mercurial)*			$10 00	18	58	9	29
51	*Barometer (Woodruff's Mercurial)*			$15 00	22	75	11	38
52	*Buckeye Harvester Mower*			$125 00	150	410	75	225
53	*Patent Cylinder Plow (R. H. Allen & Co.)*			$18 00	27	90	14	45
54	*Collins & Co.'s Cast Cast-Steel Plow*			$25 00	38	120	19	60
55	*Hand Cultivator and Weeder (Comstock)*			$9 00	17	54	9	27
56	*American Submerged Pump*			$15 00	19	65	10	33
57	*Pump and Sprinkler (Tage's)*			$5 00	13	37	7	19
58	*Family Scales (Fairbanks & Co.)*			$14 00	21	70	11	35
59	*Building Blocks (Crandall)*			$2 00	6	20	3	10
60	*Pocket Lanterns (One Dozen)*			$9 00	17	54	9	27
61	*New American Cyclopædia (Appleton's)*			$80 00	96	325	48	163
62	*Worcester's Great Illustrated Dictionary*			$10 00	18	58	9	29
63	*Eumelan Grape-Vine, No. 1*			$1 00	3	....	2	....
64	*Eumelan Grape-Vine, Extra*			$2 00	5	....	3	....
65	*Double Harpoon Horse Hay-Fork*			$10 00	18	58	9	29
66	*Any Back Volume Agriculturist*	Unbound. Post-paid.		$1 75	....	20	....	10
67	*Any Two Back Volumes*	do.		$3 50	....	29	....	15
68	*Any Three do.*	do.	do.	$5 25	13	37	7	19
69	*Any Four do.*	do.	do.	$7 00	15	47	8	24
70	*Any Five do.*	do.	do.	$8 75	17	54	9	27
71	*Any Six do.*	do.	do.	$10 50	19	61	10	29
72	*Any Seven do.*	do.	do.	$12 25	21	68	11	34
73	*Any Eight do.*	do.	do.	$14 00	23	74	12	37
	—(*Each add'l Volume at same rate*)				....	....	....	....
76	*Fourteen Vols. XVI to XXIX*			$24 50	34	110	17	55
77	*Any Back Volume Agriculturist*	Bound. Post-paid.		$2 50	....	24	....	12
78	*Any Two Back Volumes*	do.		$5 00	....	36	....	18
79	*Any Three do.*	do.	do.	$7 50	16	48	8	24
80	*And Four do.*	do.	do.	$10 00	18	60	9	30
81	*Any Five do.*	do.	do.	$12 50	21	71	11	36
82	*Any Six do.*	do.	do.	$15 00	24	82	12	41
83	*Any Seven do.*	do.	do.	$17 50	27	92	14	46
84	*Any Eight do.*	do.	do.	$20 00	30	102	15	51
85	*Any Nine do.*	do.	do.	$22 50	33	110	17	55
	—(*Each add'l Volume at same rate*)				....	....	....	....
87	*Fourteen Vols. XVI to XXIX*				47	143	24	72
88	*A $10 Library (Your Choice)*	All sent paid through by Mail or Express.		$10 00	18	58	9	29
89	*A $15 Library*	do.		$15 00	24	85	12	43
90	*A $20 Library*	do.		$20 00	31	106	16	53
91	*A $25 Library*	do.		$25 00	38	125	19	63
92	*A $30 Library*	do.		$30 00	44	144	22	72
93	*A $35 Library*	do.		$35 00	50	162	25	81
94	*A $40 Library*	do.		$40 00	56	177	28	89
95	*A $45 Library*	do.		$45 00	62	192	31	96
96	*A $50 Library*	do.		$50 00	68	207	34	104
97	*A $60 Library*	do.		$60 00	80	237	40	119
98	*A $75 Library*	do.		$75 00	100	282	50	141
99	*A $100 Library*	do.		$100 00	125	360	63	180
100	*A Choice of Good Books.*				....	....	....	....
101	*A* **Steam-Engine** *that will GO*				3	24	3	6
102	**Pocket Knife** (*Multum in Parvo*)			$3 50	8	28	4	14

☞ *Every Premium article is* **new** *and of the very* **best** *manufacture. No charge is made for packing or boxing any article in our Premium List. The Premiums,* **Nos. 8** *to* **11, 21** *to* **24, 27, 28, 29, 47, 48, 63, 64,** *and* **66** *to* **100** *inclusive, will each be delivered FREE of all charges, by mail or express (at the Post-office or express office nearest recipient), to any place in the United States or Territories.—The other articles cost the recipient only the freight after leaving the manufactory of each, by any conveyance that may be specified.* (*Steam-Engine mailed for 36 cents extra.*)

containing a great variety of Items, including many good Hints and Suggestions which we throw into smaller type and condensed form, for want of space elsewhere.

Postage 12 Cents a Year in Advance.—The postage on the *American Agriculturist* anywhere in the United States and Territories, *paid in advance*, is 3 cents a quarter, 12 cents a year. If not paid in advance, twice these rates may be charged.

How to Remit:—Checks on New-York Banks or Bankers are best for large sums: made payable to the order of **Orange Judd & Co.**

Post-Office Money Orders may be obtained at nearly every county-seat, in all the cities, and in many of the large towns. We consider them perfectly safe, and the best means of remitting fifty dollars or less, as thousands have been sent to us *without any loss.*

Registered Letters, under the new system, which went into effect Oct. 1, 1868, are a very safe means of sending small sums of money where P. O. Money Orders cannot be easily obtained. *Observe*, the *Registry fee*, as well as postage, *must be paid in stamps* at the office where the letter is mailed, or it will be liable to be sent to the Dead-Letter Office. *Buy and affix the stamps both for postage and registry, put in the money, and seal the letter in the presence of the postmaster, and take his receipt for it.* Letters thus sent to us are at our risk.

Bone Mills.—"D. P. M." Bones require a great deal of power to grind them. We know of no satisfactory horse-power mill.

Bone Spavin.—A. M. Smith, Washington, Conn. If your horse is not lame with the spavin, leave him alone. If lame, apply a good blister and turn him out for about a month. If this fail, the actual cautery is to be applied.

Warts on Horses.—E. H. Hallis, Newton Co., Ind., has a young horse which has upon his breast what he takes to be a wart, as large as a silver dollar. If the trouble described is really a wart, the application of nitric acid repeated for two or three days, will remove it. But if it is not a wart, he had better call a Veterinary Surgeon, as otherwise that application may produce much trouble.

Which Breed of Cattle is Best?—We are asked which of the four breeds of cattle is the best,—Jersey, Devon, Ayrshire, or Shorthorn,—which combines the most good qualities for a common farmer? This depends entirely on what kind of a common farmer it is. If a butter-maker, the Jersey is the best, by all odds; if a breeder of working cattle, the Devon; if a producer of milk for sale, the Ayrshire; and if a beef-maker, the Shorthorn. Each is best for its particular use. If a combinative cow is wanted, one whose male calves will make fair oxen or beef, and whose milk will be abundant, yet good for butter, the Ayrshire will generally be the best, but more money will be made if that breed is selected which is best adapted to one particular industry,—and that industry well followed.

Milk Fever.—A Wisconsin correspondent writes of a cow belonging to a neighbor that was attacked with milk-fever one day after calving. She was found just at night unable to rise—tongue protruding, eyes glassy, and it was not thought that she could live until morning. They gave her a dose of physic consisting of one-half pint of soft soap, and one-half pint of vinegar,—mixed at the mouth, well shaken, and poured down. To their great astonishment they found the cow up and eating the next morning. They call this "the nearest a miracle they have ever seen." It is certainly a remarkable cure, and we know by experience that even a violent dose of physic is usually ineffectual in milk-fever. An ounce of prevention is worth a pound of soap and vinegar.

Corn Fodder.—Mr. F. T. Baldwin, of Patterson, N. Y. (referring to the remarks about *curing* corn fodder in Ogden Farm Papers, No. 16), says: "I have raised some every year for about 20 years, and have never had any trouble in curing. I sow from May 10th to June 10th, and commence feeding the last days of August. I find at that time the stalks have their full growth. After I have fed as much green as I wish, I go into the field and with both arms reach around and bind tight at the top, letting the commencement of the stout stand fast upon the hills or drills—then cut and stout around until I have as much as I can bind at the top. I have never lost a stalk by being moldy or damaged in any way. The stalks on the inside will remain green, and retain all the sweetness as when first cut. My theory in regard to putting up in this way is this: the stalks that are bound without cutting keep the balance of the stout spread out, and the air has free circulation upward through the stout which prevents mold or damage. On moving the stalks to the barn, unbind the stout and tie up in sheaves. We usually make three sheaves from one stout."—This is a very intelligible description, and we (O. F.) shall give the recommendation a fair trial. We infer that it will not do to commence making the stouts (stocks) before the middle of October, when the stalks will have become somewhat dry, and this will entail some loss in quality. Still, if it will secure good keeping, the loss will be more than made up.

SUNDRY HUMBUGS.—We are right glad to find the *new* contributors to this department less numerous than at any time before, for a long time. Only twenty new schemes, or names, require special notice this month. Very many who have written us, or sent contributions of circulars within the past four weeks, will find them already referred to in our previous numbers.

.....A Scranton (Pa.) subscriber sends a circular of a $5 Sewing Machine from Nassau-st., N. Y., and says a neighbor sent the money and received one weighing 1¼ lbs., in a box 8 inches square, and 5 inches deep; that it will sew a little, but on trial it does not prove to be worth 50 cents (he might have said not worth 5 cents!)

.....We have circulars offering 52,000 tickets at $5.00 each, in a "Grand Gift Concert and Distribution, for the benefit of the Foundling Asylum of the Sisters of Charity, in the City of New York, *and* the Soldiers and Sailors' Orphans' Home, of Washington, D.C., to be held in Washington City, June 7th, 1871." While *all* such affairs, even when genuine and as fairly conducted as can be, are wrong in principle, and bad in their influence upon all concerned, this one has several special objections. To make up the pretended $260,000 of prizes offered, the large block of Erie R. R. stock put in must be reckoned at par, while it is selling in open market at about *one-fourth* of this sum! As a "vacant lot" is usually 25x100 feet, we should not like to take shares in the $17,500 of *vacant* lots in Govanstown, Md., at $2,500 each; nor in the $80,000 to $100,000 of other "real estate" of probably similar valuation. We should like to know what part of the proceeds go to the Washington "Home," and what part to the N. Y. Asylum. Further, would *we* have any chance, if the whole number of 51,999 other foolish people should not be found to take tickets at $5 each. Five dollar bills must somewhere be plenty—fools ditto—to afford any chance for *such* an enterprize!.....

The N. Y. "Agent" of the above advertises himself also as "Agent" of the "Cosmopolitan Benevolent Society of California," which proclaims 100,000 theatre tickets at $2.50 each, each ticket having one chance in fifty at some gold prizes. This differs no whit from the old lotteries suppressed by law, except in giving less chance for success to the ticket buyers.....The "$765,000 in Cash Gifts" of C. B. Taylor & Co., 78 Broadway, can not need any attention from us, among our readers. If distant Editors publish the "direct advertisement," we notify them not to ask us to help collect their bills—nor will Geo. P. Rowell & Co. help, as they give Taylor & Co. no permission to refer to them. N. S. (nuff said).....

Golloday's "Drawings" at Danville, Ky., is another of the schemes to blind and catch greenhorns.....Edgerton & Co., 703 Second ave., N. Y., is writing letters about "Havana Lotteries," and as a blind, offers to go in on shares in the purchase of tickets. His share will of course be *all* the money that comes to him from his dupes.....A so-called "American Engraving Company," at a small town in Connecticut, has the impudence to send an advertisement to our weekly journal, HEARTH AND HOME——offering engravings at $1, and with each a ticket giving a chance at **$200,000** of gifts to be distributed in July. We refer said "Company" to our humbug columns in this and previous numbers. We charge nothing for advertising *such* enterprises. How could we have the heart to do it, when they are of such inestimable benefit to the dear people!....

The "Foot of the Rocky Mountains" must be a wonderful place, if anybody can find it. At least, so thinks a New York "medicine man" who, now under one name, then under another, and then another, professes to have been a Missionary there, and to have discovered a wonderful plant whose juices cure almost every disease that flesh (especially lung-flesh) is heir to. An old woman with a wonderful his-*story*, and a changing face and name, graces the frontispiece of this doctor's wonderful—wonder-telling-pamphlets. We can but feel sad to know that there are poor dupes enough to send money sufficient to keep this man at his swindling trade....."Married" or "Unmarried," we advise you to burn all circulars coming from John H. Stevenson, of Nassau-street, N. Y. Neither he nor any other man living can do what he proposes. So keep your $10 for some good purpose.....Put no faith in any "Potato Bug Destroyer," advertised in Michigan or elsewhere. If any man *believes* he has a sure thing of this kind, let him go into the culture of the tuber and make the money himself. We can't afford a "stamp" for any such tract, though earnestly invited to do so by a lot of circulars on hand.....

Post-masters and others should be careful about furnishing any lists of names to parties in N. Y., and elsewhere—no matter what the pretense, or what the compensation *offered* (though never paid). These names are almost invariably used for improper or humbug purposes. We have a dozen or more of different circulars of this kind sent out through the country, every one of which is a swindling dodge....The "Arabian Secret to restore Verility!" We suppose the ignorant swindler who advertises this from Philadelphia, at $5, means "Virility." He better take a dose himself, and then go to Arabia and sell his medicines. Our people don't want any such verility or virility as abounds in that country.....

The pretended counterfeit money operators are at work—but not so briskly. Some of them have taken to sending written instead of lithographed letters. The most annoying rascal in this line is one who pretends to be Day & Wallace, 143 Fulton-st., N. Y. He, by theft, or by reprinting, or by other means, has secured a lot of letter envelopes of Orange Judd & Co., and sends them to distant parts of the country enclosing his swindling circulars. We could expect nothing else. Those who will lie and cheat will not stop at theft. "Milton & Brother," new No. 307 Bleecker-st., N. Y., is one of those chaps who plead with young men to take more of the stuff, or "come and get it at the Factory, No. 10 Fake street, where you will see over the door, Harris & Brother, Fancy Goods. You ring three times, and when you come in, introduce yourself. You need not be afraid, for I pay the Police to inform me of all coming trouble."—As there is no Fake-st., of course this is all a ruse to get you to *send* money. Among the new names in this line, we find Chas. A. Roberts and Jos. G. Perry, both at 688 Broadway; J. B. Page & Bro., 200 Broadway; John Baker, 5 Catherine-st., etc.

Sage's Vinegar Recipe.—Vinegar is ordinarily produced by allowing cider, alcoholic fruit juices, as wine, sugar containing fluids, as molasses, sweet-wood saps, and the like, to stand for a long time exposed to the air. The process is greatly hastened by various methods securing greater exposure, the more common one being to allow the liquids to trickle down through barrels filled with shavings, to which free access of air is given. Sometime since F. I. Sage proposed arranging a series of gently inclined shelves, to have the fluids drip from one to another, spreading over the surface of each, so as to give large exposure. With a great number of these shelves, the same end would be secured as in the use of the shavings. The plan was submitted to Prof. Johnston, of the Wesleyan University, and Prof. Silliman, of Yale College, and they gave their approval of the idea without specially examining any apparatus, as we understand. Whereupon, Mr. Sage advertised his process largely by newspaper and circular, offering the secret for $5, first taking a pledge of secrecy from the purchasers. His circulars gave such wonderful claims for the great value of the process, the immense profits to be made, etc., that multitudes of persons were led to invest $5 each. They probably did so, largely on their faith in the recommendation of the worthy Professors. We have yet to hear of the first one of all these purchasers who has put the process to practical, profitable use—though a few may have done so. One great objection to Mr. Sage's circulars is the claims he puts forth as to the profits to be surely derived, and the simple, cheap, and easy adoption of the process by any and every person. Last October, we stated in a P.S., that we had received (too late for insertion then) a withdrawal of the recommendation of the above-named college Professors, and that they had so notified Mr. Sage—adding, that "of course he would not send out any further circulars with their names as endorsers," and we supposed that that would end the matter. But it would seem that this is not the case, as we learn that the Professors are still greatly annoyed by letters concerning Mr. Sage, and we are requested to publish the following, which speaks for itself;

A CARD.

"The undersigned hereby give notice, that their certificate to Mr. F. I. Sage, of Cromwell, Ct., concerning his *vinegar process*, was withdrawn many months ago, and he forbidden longer to use our names, because of his very objectionable practices connected with it that came to our knowledge. We are driven to this course, as we learn that he is still distributing his circulars through the mails with our names attached. Beware of them.'

JOHN JOHNSTON, Prof. Nat. Science, Middletown, Ct.
B. SILLIMAN, Prof. Chemistry, etc., New Haven, Ct.
May 3d, 1871.

Messrs. B. Fox & Co.—Our remarks concerning this firm last month were based upon the information then obtained, and justified by it. A member of the firm has called upon us with several references, given us their actual place of business (369 Canal-st.), says they intend to do a straightforward business, and challenges proof that any dollar intrusted to their firm has not been appropriated to the purposes directed by the sender. He disclaims any intention or willingness to deal in the articles to which we objected, says he was not aware of their being in the catalogue, and he promises that they shall be stricken out and not supplied. We have no desire to interfere with any legitimate business, and will not; and so long as Messrs. B. Fox and Co., (which is the real name of the firm) or any other firm or individual, do, as they assure us they will do, we shall find no fault. But we shall always stand ready to expose and call to account any one sending, or offering to send, the "French" or other appliance that professes to diminish population, or to render the practice of immorality safe, or any books, cards, or pictures that the chaste should not purchase, or marked playing and fancy cards, and the like.

Watering Tomatoes.—An amateur, who proposes to compete for Col. Waring's hundred dollar premium for the largest tomato grown this year from his seed, asks if it is advisable to water the plants with manure water during fruiting. If any manure is used at this time, it should be exceedingly dilute, and we would prefer to use it only during the early growth; but the most abundant watering should be continued throughout the whole period of fruiting. Nothing does so much to make the fruit large and smooth as plenty of water—applied after the sun goes off in the evening.

That Mexican Saddle.—We have received many letters complaining because the Mexican and McClellan Saddles, pictured in our April number, have iron instead of wood and leather stirrups. Our Horseback Editor replies that in directing our artist to go for his models to the best wholesale saddlers in New York, he did not apprehend that such a mistake would be made. But evidently people who sell saddles in New York are different from the people who ride in them on the plains. One correspondent, writing from Nevada, objects to our preference for the English saddle, saying, "I profess to be a first-class rider, but I could not be hired to get on a bad horse with an English saddle." The writer of our article—by no means professing to be a first-class rider, has had some twenty-five years' experience in the saddle, including nearly four years of steady cavalry service in the Southwest, and he has been obliged at times to become accustomed to all sorts of saddles. He has not yet seen a horse he would not willingly mount, and could not stay mounted on, with a good English saddle. He would not willingly mount a back-leaper or a runaway with any other. Possibly if our correspondent had had twenty years' practice in English pig-skin, he would change his opinion.

Bloody Milk.—Mr. Job Osborne, of Farmers' Institute, Indiana, has a cow, a large milker, that gives bloody milk out of the two front teats. He asks for a remedy.—We have had no personal experience with this difficulty. Allen says, in his *American Cattle*, "Bloody milk generally comes from an injury to the udder or teat by inflammation, a bruise, or wound, and sometimes from disorder in the interior part of the udder. * * * The effected teat and udder should be bathed with some soft emollient, as in garget or puerperal fever. An ounce or two of saltpetre, dissolved in water, may be given as a dose. * * * Such difficulties, however, seldom occur, and are usually overcome without difficulty in a few days by careful usage. Should the udder persist in yielding such disordered milk for any considerable length of time, and through a majority of the teats, it must be a question of profit to the diaryman whether to dry her off for the shambles or still retain her in the dairy, or for breeding in hopes of a better prospect in another year."

Double Head of Rye.—J. H. Shook, Long, Ill., sends a double head of rye. We have seen similar specimens several times before. We shall be glad to know if the seed from it produces any double heads.

High Priced Seeds.—"A Subscriber" at Three Rivers, Canada, complains that he paid 50 cents for a packet of choice Pansy seeds, and received a parcel containing very few seeds, and he looks upon the transaction in the light of a humbug. Those who purchase novelties must expect to pay high for them. Many foreign seeds sent out by our seedsmen are in the original little packets put up abroad. The dealers generally charge in proportion to the cost. Some seeds cost many times more than their weight in gold.

Hoop Poles.—F. W. Hall, New Haven, Conn., says: The kinds principally used are walnut, all kinds of oak, and occasionally a few white birch. Trim them out *close*, and cut them off twelve and fourteen feet long, then split them, and hew or shave them down smooth, and put twenty-five in each bunch. Bind them with rope-yarn, and they are ready for market.

Large Eggs.—Referring to a notice of some large hen's eggs, given in the May Basket, F. T. Simpson, Wilkes Co., Ga., writes: "More than two months ago Mrs. S. took from a hen's nest an egg weighing 6 oz., and about three weeks after found another that weighed 5 oz., and since then has brought in four or five, which were not weighed, but much larger than the average size of hen's eggs. The first two were boiled until hard. The larger, upon opening, had two coatings of white or albumen, one enveloping the other, and two distinct yolks, joined together by a ligament ¾ of an inch long by ¼ of an inch wide. Had this egg been hatched, the product would have been twin chickens, joined together after the manner of the Siamese twins. The smaller had two whites and two yolks, which were not united, but entirely surrounded by the whites."—We have found all the very large eggs that we have examined to be either double yolked, or, as sometimes happens, a completely developed egg, with its shell, within another shell, and surrounded by albumen.

Fattening Cattle and Hogs in Illinois.—A correspondent writes: "As there is considerable talk in regard to prepared food for cattle and hogs, I will give my plan for getting the most out of a bushel of corn. In the first place I feed the corn to cattle, and have hogs to follow, and the feed they get is second only to cooked corn; then, after the cattle go on grass, I put the hogs on clover with corn, and the green food appears to help digest the corn, so that the hogs get the same amount of nourishment out of it that they would if steamed."—The plan of giving hogs a good clover pasture is excellent; and the reason assigned is the true one, "The green food appears to help digest the corn." And would it not be well to give the cattle some corn with their grass for the same reason?

Colorado Agricultural Society.—The Denver Tribune of April 22, gives the following as a list of officers: *President*—H. B. Bearce; *Secretary*—Fred. A. Clifton; *Treasurer*—Frank Palmer. The next Annual Fair is fixed for the 12th September, extending to the 16th, inclusive, but the place of holding it is not mentioned.

Chicken Cholera.—M. M. Sheets, Holden, Mo., finds this disease taking off his laying hens and young chickens. It is malady respecting which little is known, though as usual in such cases all sorts of nostrums are prescribed, the array being formidable in proportion to the ignorance of the would-be doctors. We have gathered all the information respecting this disorder we could procure, since it prevailed a few years since at the West. There is a very malignant type that is almost always fatal. A milder form appears in some districts that does not destroy more than half or one-third of the birds attacked. Alum water made pretty strong, given for drink and mixed with their soft feed, has seemed to be the best medicine in many cases that has been reported.

Potato Bug.—M. D. Settler, Dayton, O. The insect sent is the Colorado Potato Beetle. The best known remedy is the virulent poison, Paris green. Mix with eight or ten times its bulk of flour, and dust the vines. Use carefully to avoid accidents.

Spurious Eggs for Hatching.—A correspondent asks if eggs bought for dark Brahmas, of a dealer who advertised in the *Agriculturist*, were genuine. He says they produced chicks of various colors, and some had no feathers on their legs.—If the color is not a dark brown at first, with two stripes on the back running from neck to tail, and with legs and first and second toes well feathered, then the eggs were not dark Brahmas. At four or five weeks old the color should incline a little toward grayish, and the stripes become chocolate. It is charitable to suppose that the advertiser meant to act fairly. You should write to him to correct a mistake if he has made one. If he is a cheat, we shall upon evidence exclude his advertisement. The *Agriculturist* always fights humbugs of whatever sort, and endeavors to insert only trustworthy advertisements.

Double-furrow Plow.—Z. Acher, Chester Co., Pa. We know of no plows of this kind in this country. The article was given to call attention to an implement now popular in England.

Corn Husking Machines.—M. C. Carr, of N. H., wants to know more about the corn husking machines alluded to in our report of the Trial of Implements at the last N. Y. State Fair. We gave all the essential facts. We do not regard them as a complete success at present. All that can be said is that they "promise well." We hope and believe that they will be improved, and that in a few years we shall no more think of husking corn by hand than of thrashing wheat with a flail. We will keep our readers informed of all improvements that may be made in the huskers.

Diseased Fowls.—E. W. Irish, Amherst (State not given), has lost half his grown fowls by a disease with the following symptoms: the legs become weak, then the head drops to one side, and comb turns pale.—Put the fowls in a *dry* place. Feed potatoes, boiled, mashed and mixed with an equal quantity of scalded meal, adding a pinch of cayenne to each fowl. Put scraps of rusty iron in their drinking water. If too sick to eat or drink, give them soft hay to rest on, and let them alone.

Dark Brahma Fowls.—J. M. Williamson, Butler Co., Pa., asks: "Are the dark Brahma fowls a good breed to raise for market, and good layers?"—They are large, easily fattened, and good winter layers, but will not produce so many eggs in a year as some of the non-sitting breeds. For the table they are rather coarse-fleshed, but still of passable flavor. They have the merit of being very hardy when chickens, and easy to rear in great numbers.

Peas on Sod Land.—"G. N. L." Instead of plowing under the peas, we should prefer to sow them on the furrows as left by the plow, and harrow in. The variety we usually sow is the common Canada Creeper. Should be glad to know if there is a better variety.

Will Clover, Peas, and Beans, produce milk containing more cheese than grass and corn? Such is said to be the case, from the fact that the former contain about double the quantity of nitrogenous or "cheese-forming" material than the latter; but we know of no satisfactory proof, and we should, for reasons we have not now time to give, expect more *cream* from cows fed on the peas, etc., than from those fed on corn, etc.

Will Bells on Sheep Frighten away the Dogs?—R. H. Martin writes: "Our sheep have a range of 50 acres, one-half of it pine timber. They never stay at the house nights, but go to the pines. They have a bell on them, and though several sheep have been killed in the neighborhood by dogs, my sheep have not yet been disturbed. Is a bell a reliable safeguard?" It is unquestionably a great help, but cannot always be depended on. Put a bell on the sheep and some lead in the dogs, and use all your influence to get a law enacted taxing the dogs, and see that it is enforced.

Feeding Horses according to their Work.—Mr. Smith, of Wisconsin, asks us how he shall feed his horses, and remarks: "I feed them according to their work, and they are in splendid condition. I am a great hand to pet horses, and like to have them in good condition for their work."—That is right. Nothing is more aggravating in a busy time than an inefficient team. It is economical to have good horses (or cattle), and take good care of them. Feed regularly, groom thoroughly, and work steadily; these are the only rules we can give. "Feeding according to their work" must not be carried to extremes. When a horse is overworked, overfeeding will not help him; and it is almost certain to bring on indigestion, and this leads to colic, and, if persisted in, will probably end in death. Many a good horse is lost in this way. We know farmers who do not give their horses any grain on Sunday because they are not doing any thing; whereas the horses should, if any thing, have more grain, because they have time and strength to digest it.

Tree-Planting in Illinois.—A bill is before the Illinois Legislature offering a bounty for plantations of forest-trees. As the bill has not yet become a law, we do not give the conditions it proposes. It is believed that this bill, or some acceptable substitute for it, will be passed.

Purity of Plaster.—"D. P.," of N. H., asks, "Is there any way for farmers to test the purity of gypsum that is not expensive?"—We know of none that does not require considerable chemical knowledge and skill. The manufacturers should have it analyzed by a good chemist. It is their interest to satisfy farmers that the article is good.

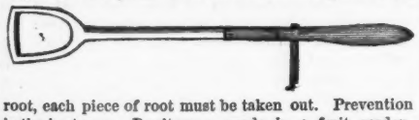
Half-a-Year, Now!—This number closes the first half of Volume **30.** When desired, subscribers will be taken for the remaining half of the year at half the regular rates, single or clubs. In Premium lists, two half-year subscribers may, during this month, count the same as one full subscriber. ☞ Our friends may now invite in their friends for a half year's trial.

Does Farming Pay?—We often hear it said, there is no longer any money in farming. In the course of our experience we have heard similar statements concerning other occupations. A printer, adhering in these days to the old-fashioned hand-press, might make the same complaint, and with as much justice as the present farmer, who carries on operations in the old style, or a carpenter who makes his moldings by hand and planes boards. The improvements in machinery of all kinds have so quickened the demand for labor in every branch of industry, that the farmer as well as the mechanic must abandon hand labor and use machinery, or his profits must be eaten up in expenses. Hay may be made and put in the barn by machinery now at the rate of one dollar per acre. By hand the cost would be four dollars. The old style of crop is half a ton per acre; now three times that is a fair crop. The difference is just that between eight dollars per ton and sixty-six cents. The wide-awake farmer has this difference for his profit, eight dollars being about the market price for hay in many places. The same is true of most other crops, grain and roots especially. In feeding stock and making and using manure, equally large differences result. So of breeding stock; the old style rooter, and the modern Berkshire, are not more unlike than are their several values when made into pork. The same of the ill-fed, rough-coated native heifer or steer, and the sleek, well-fed grade Jersey or Ayrshire. The same is true of many farming communities in respect to roads, fences, and schools. All these must be fitted up with *modern improvements*, or farming as a business must suffer. We *know* whereof we speak, when we emphatically deny that farming is an unprofitable business. The capital invested will, if rightly used, return in this branch of industry as good an interest as in any other, besides having the invaluable merit of indestructibility. A workshop or factory may burn up, but land remains not only intact, but from uncontrollable circumstances is ever advancing in value. So the labor of the farmer is sure of some remuneration if properly directed. Poor farms and poor farmers are the ones whose crops fail through drouth or excessive wet. On a properly conducted farm these may damage the crop, but will never destroy it. The divine promise of seed-time and harvest is for the especial benefit of the farmer; but it rests with himself in a great measure whether the fulfilment comes to him individually, or whether his more enterprising neighbor secures it.

Exhibition at Jersey.—Not New Jersey, but one of the Channel Islands, so celebrated as the home of the Jersey cattle. We have received a prospectus of a show to open on the 28th of the present month, which offers liberal prizes for bulls, heifers, and cows of both Jersey and Guernsey cattle, as well as for butter from both of these breeds. Prizes are also offered for horses, pigs, poultry, and dogs, for cage-birds, for plants and cut flowers, agricultural and horticultural machinery and implements, and for various works of art and industry.

Improved Stock.—The present high price of thorough-bred stock, while it limits the business of breeding to men of capital, does not necessarily prevent the ordinary farmer from procuring male animals wherewith to improve his native stock. A stock of grade cows for the dairy may be gradually gathered up by the expenditure of from fifty to two hundred dollars. Many breeders of Jersey cattle will dispose of a young bull calf for a very small sum, because its color does not suit their taste, while in respect to its pedigree or other *useful* qualities, it may be faultless. Such an animal purchased young and well cared for, will become useful for raising calves, at a year old. A yearling heifer of his get will, by the use of another such animal, become profitable at two years old, and its calf will be three-quarters bred, and it is quite likely to become as valuable for the dairy as a pure bred animal that could not be purchased for less than $300 or $400. The produce of this cow would be seven-eighths bred, and if care is taken in selecting the parents, would show little difference from entirely pure animals. Co-operation among a few neighbors who would each procure and keep a young bull whose services they might exchange with each other to prevent close breeding, would soon change the appearance as well as the productive qualities of the stock of quite a large district. The main point to be guarded against is not to breed from any but pure stock. All male grade animals should be emasculated or go to the butcher, while young. The use of a grade bull ought not to be permitted. Here is where many a mistake is made. In the course of four or five years, quite a herd of three-quarter or seven-eighth-bred animals would accumulate, and the profit would begin to come in. Ayrshire and Jersey cattle should be the breeds aimed at, as these are excellently fitted for the dairy, and are profitably fed for the butcher on ordinary farms. They are exceedingly tractable, quiet and orderly, are large milkers, and yield much butter of good color and flavor. The Devon and Durham are better fitted for the grazier, and would be more suitable where beef is the object aimed at. But whatever the breed chosen, care should be taken to avoid neglect, or loss will inevitably ensue. We have known cases where money has been invested in thorough-bred stock which has been treated as though its blood alone would be sufficient to protect it from neglect, exposure, and starvation. The natural consequence of such a mistake was made a ground of complaint against the breeder, and led to dissatisfaction and disgust. The old adage, "blood will tell," true as it may be, is no talisman against such an error. The refined nature of an animal carefully bred through many generations, will often enable it to sustain much ill treatment, but it will not thrive under it. When possessed of a specimen of such stock, give it fair treatment—pampering is unnecessary, as it is unwise—but care and proper feed and attention will make the investment a greatly profitable one.

Fruit Trees in Gardens are often seriously damaged by cutting their roots with the spade. The roots thus severed throw up sprouts which are difficult to get rid of. We know of but one cure, which is, to remove the earth around the sprouts carefully, and cut them off with a sharp knife, leaving the cut with clean edges. If the sprouts are from the detached parts of the



root, each piece of root must be taken out. Prevention is the best cure. Don't use a spade in a fruit garden. Make use of a digging fork or a tool shaped as above. The work will be slower, but with such a tool the roots cannot be injured. The handle can be made and fitted at home; a blacksmith will forge the iron out of old tire.

Brushing Peas.—To prevent the wind blowing down the peas, drive stout stakes about six feet apart in the row to support the brush.

The Currant Worm may be kept in check by vigorously destroying the young larvæ. In the early morning they may be discovered just coming into active life on the under side of the leaf. They are then about a quarter of an inch in length. By removing the leaf with the worms adhering, they may be killed in large numbers. By close attention for a short time daily, the bushes may be saved; no surface application can prevent their appearance. Unceasing warfare is the price we must pay for our currants and gooseberries.

Buckwheat should be sown as early as possible in July. If the ground is not perfectly mellow, give one more plowing; this crop will suffer on imperfectly prepared ground. It may be true that a comparatively fair yield may be gained under poor culture, but the aim should be to grasp all that Nature will yield. A farmer is a good business man, only when he gets the largest return from his land by means of his labor of hand and head. These are his capital, and he can only succeed by a wise use of them. Buckwheat is generally hurried into the ground as a catch crop, but it can be made sufficiently profitable to pay well for all the care and attention that may be given to it. *The first requisite is mellow ground.* Plow and harrow until the lumps are reduced. Plow once more, and sow and harrow in. A bushel of seed is sufficient for an acre. We have succeeded better with this liberal seeding than with two or three pecks. Grass seed and clover will often take well with this crop, especially if the soil is in fair condition. The dense shade afforded will shield it until the vigorous heats of summer are past, when the fall rains will push it ahead sufficiently to withstand the frosts of winter. Great caution must be observed in harvesting this crop. The quality of the flour depends mainly in getting the grain in perfectly dry. Never on any account stack it or put it into the barn. Cut when the dew is off, and put up in small shocks without tying; watch the weather closely, and as soon as a dry, breezy day occurs, haul in and thrash out. Clean up *immediately* after thrashing, and spread the grain on the barn floor, turning over a few times, and allowing the drying winds free access to it. The yield of flour will be greatly increased by such treatment. Twenty-five pounds of fine flour may be taken from a bushel of grain after the miller's toll is deducted, and new flour brings a high price. The middlings should be separated from the bran, which will be found an excellent addition to the hot-bed in the spring, and is worth preserving for that purpose. The middlings are excellent food for young stock-pigs, horses, or poultry, but we would not advise them to be fed to cows. The butter resulting from such feed will be white and tasteless. Treated thus, Buckwheat is safe to yield at the rate of a dollar, or even considerably more, for each bushel of grain, besides the feed yielded by the middlings. But let it be borne in mind that the early market must be secured, or the profit will be considerably reduced.

"Hybrid" between a Rabbit and Cat.—A story comes to us by the way of Sauk Co., Wis., about some hybrids between the cat and rabbit born in Connecticut. These remarkable animals feed on clover and catch mice! It is not stated whether they give midnight serenades or not. Our correspondent wishes we would say something about the matter; so we say—we don't believe it.

Management of Colts.—Colts are very apt to be left to shift for themselves after weaning. This is wrong. A year's gain in the usefulness of a horse may easily be made by care and attention during the first few months of its life. The mare, while nursing its foal, should not be overworked, and good pasture or green feed in the stable will keep her in fair condition, and furnish sufficient nourishment for the foal. When weaned, and pasture becomes short, neglect is hurtful; then care should be exercised to keep it growing. During the fall months some of the best early cut hay should be given to it; and when the horses are stabled, let it have a loose box, or stall adjoining them, where it can see and become used to the discipline of the stable. Everything around it should be well secured, lest in rubbing itself it might get something loose. A habit of breaking things and getting loose is easily and invariably formed at this time, and should be guarded against. During winter, feed your colts as you feed your horses. Give them a share of what is served out, oats, corn, or ground feed as it may. They cannot grow or fare well otherwise. "Stinginess" don't pay in rearing young animals. An addition of twenty-five or forty dollars to its value may result in the winter's feeding and care of one colt. Generosity here (of course exercised with judgment) is only wise foresight, and will pay good interest on the investment. Colts are better kept up than allowed to run around. They will become more docile and tractable, and will learn fewer tricks. Take them out only for exercise, except when at pasture, and then be sure to have a secure fence, or they will inevitably learn to rub it down or jump over it. Train your colt to walk, and keep it walking. Farmers don't want fast-trotting horses—as yet—we have need so far of fast-walking horses, great need, we may say, for they are far too scarce. Therefore, train colts to walk at the rate of four miles an hour at least. The time will come when a horse that can walk his mile in twelve minutes will take a prize at an agricultural fair, equal in value to the best trotter. A team of such horses could plow an acre of ground, with a furrow six inches wide, in five hours, allowing time for turnings round. This is above the quantity plowed on the average now, in a day of ten hours. Horses of such capacity would be worth a large price, and it should be our endeavor to produce them. We have a breed that can transmit trotting capacity to its descendants, why could we not raise up a breed of walking horses? Some one might make a name and fortune in this.

Bark-louse.—"A. B.," West Brom. The specimen of apple-tree is infested with Harris' Bark-louse (*Aspidiotus Harrisii*). Scrubbing the limbs with lye or very strong soft soap will help. If but one tree is infested, cut and burn the limbs upon which they are.

Composts.—"L. W. G.," Lancaster Co., Pa. Sod obtained from the banks of streams is valuable, if composted with lime, when the soil is deficient in organic matter, though it would be better to mix it with animal manures. Sheep-manure should never be mixed with ashes. Apply the ashes separately, and mix the sheep-manure with soil.

Feeding Milch Cows.—Last month we published a translated article upon "Swedish Dairy Farming," in which the singular practice of feeding horse manure to milch cows was described, but not commended. "Tommy," Ripley Co., Ind., writes: "My cows that I have at home are allowed to run in the yard, into which the horse manure is thrown, and can eat all they choose (which they are sure to do). They have been eating the manure for about three months, with no good

result. The cows became poor, though they were given all of the very best of hay they would eat, with plenty of corn fodder, and two buckets of slop each day; while others that I have on another farm, one-half mile distant, and do not get any horse manure, and were fed nothing but hay, all the time were in twice as good condition. The milk has a very offensive smell, and some of it is hardly fit for use. In straining it you may strain through the finest cloth, and after it has stood twenty-four hours, there will be found to every gallon milk from one to two table spoonfuls, a black sediment. The butter is worse than the milk, for it smells stronger, tastes bitter, and frequently is of no use for the table. I think that horse manure fed to cows has a worse effect on the milk than onions, and I am sure that it is bad enough. I would recommend all the farmers who keep cows never to feed horse manure, as it makes the cow poor, the butter not fit for use, and the milk taste very strong."

Strawberry Show at Elizabeth, N. J.—The N. J. State Agricultural Society will hold an exhibition of strawberries at Arcade Hall, Elizabeth, N. J., on June 14th and 15th. If the efforts of the committee are properly responded to by the New Jersey fruit-growers, the exhibition will be a fair one.

The Milk Escutcheon in Cows.—Puchnewala, Ridgeway, Iowa, asks: "1. What is meant by the milk escutcheon in cows? 2. Is it to be relied on as a mark of a good future milker?"—The milk escutcheon is that part of the hind-quarters of the cow on and about the udder, on which the hair grows upward. Its boundaries are defined by a quirl, where the up-growing hair meets the down-growing. Sometimes it occupies only a little more than the udder itself, while in other cases it reaches well out on to the thighs, and runs up several inches wide, quite to the setting-on of the tail. Sometimes it lies only on one side of the vulva, and again on both sides. Occasionally it is cut square across half way up, and again is rounded at the top. Its form can usually be seen at a glance. Its future extent and shape can generally be clearly determined on close examination in even very young calves. The escutcheon is quite generally regarded as a valuable indication of the quantity of the milk and of the duration of the flow; while the softness of the up-growing hair, the yellowness of the skin, and the amount of dandruff produced are taken as indications of the richness of the milk. Guenon, a French herdsman, who first called attention to the escutcheon, made a study of it, and established a system almost as intricate as that of the phrenologist; and there is ample evidence that he read with remarkable accuracy the characters of large numbers of cattle submitted to his examination, by the committee appointed to investigate his system. Most modern dairy-men attach much importance to the escutcheon as a general indication; and although the minute details of Guenon's system are little regarded, its general principles are quite commonly accepted as valuable. See "Guenon on Milch Cows," sent post-paid by Orange Judd & Co. on receipt of 75 cts.

Root Crops for Western Dairies.—A correspondent in Illinois asks: "What is the best root crop for dairy cows in winter, and when is the right time to sow the seed, and how much to the acre? We at the West feed corn, corn, corn, but I know from experience that roots are cheaper and better if we knew how to grow them. About thirty years ago I raised a fine crop of ruta-bagas, but have failed several times since from poor seed, or bugs, or dry weather. If I try it again, I shall have to procure seed from the East, for they have not grown here for many years. I should like to hear from some one who has been more successful."—The best crops hereabouts are ruta-baga and mangel wurzel. We presume they would both do well in Illinois, especially the mangel. The seed of either crop may be sown early in June. The effect of drouth is much mitigated by planting not less than one inch deep and rolling the ground firmly. The seed should not be soaked, unless you can be sure of moist land. The amount of seed required for an acre, if planted in drills thirty inches apart, is one pound of ruta-baga, or five pounds of mangel. This is necessary to safety, but will produce fifty times as many plants as are to remain, as, with either crop, they should be thinned to from twelve to fifteen inches apart in the rows. We like the transplanting system better than the direct growing from seeds. If the seed is planted in the rows in the field, and thinned to single plants an inch apart at the first hoeing, they can be left until as large as a hickory nut, and then finally thinned, the rejected plants being set out in other rows. The best way to protect the ruta-baga from the skipping beetle, is to dust the leaves with sulphur, or lime, or soot; or in default of these, with any dust applied while the plants are wet with dew. It is a good precaution to plant a double allowance of seed, giving enough plants for the bug and the crop too. If the plants are growing thickly in a small seed-bed, it will be much easier to dust them than if scattered over a broad field. The method of transplanting is described in the Ogden Farm papers for this month.

Early Cabbages, Cauliflowers, and Lettuce.

BY PETER HENDERSON.

I have received letters from many sections of the country complaining that the cabbages and cauliflowers sown last September, and wintered over in cold-frames, are now (May 5th) doing badly. Many of the cabbages are running to seed, and the cauliflowers "buttoning," or showing abortive "flowers." The reason of this will be found in my article, under the head of "Don't Sow too Early," on page 222; but the remedy is the great point. A safe plan—one that need not fail—and one that can be better done by any one having greenhouses than by the cold-frame method, is the following: sow the seeds for early cauliflowers, cabbages, or lettuce, about February 1st, in well-prepared soil—say one-third each of leaf-mold, sand, and loam; spread three or four inches deep on the benches of the greenhouse, or in boxes of about that depth. Keep a temperature of from 55° to 60°, and in three weeks they will be ready to replant—this time in boxes—at about 2½ inches apart each way for the cabbages, and 1½ inches for the lettuce. By the middle of March they will, if the temperature has averaged 55°, be strong plants, superior in every respect to those wintered over in cold-frames. By this date (the middle of March) the weather is such that they may be set out in cold-frames, and covered at night either with wooden shutters or sashes for five or six days, when they will be sufficiently hardened off to be planted in the open field. We have treated a few in this manner for the past few seasons, and believe they can be so raised cheaper than in the cold-frames, and without doubt much better, without the danger of one plant in a thousand running to seed. The conversion of sash that has been used on cold-frames into greenhouses is a very simple matter: two sashes, of 6 feet in length, give, when placed at the proper angle, a width to the greenhouse of 11 feet; 2 feet of this space is used as a walk, the remainder, 9 feet, for bench room, on which to grow the plants. The outer walls may be formed of wood, in the manner described, in my article on "Roses for Winter Flowering," in April last. If heated by a flue, the length of the house should not exceed 50 feet, and, if more than one is wanted, they should be formed in threes, the ends running north and south, on the ridge and furrow plan, as detailed in "Gardening for Profit." As written directions to a novice are always more or less obscure, any of your readers interested in this matter, when in New York, may reach us in less than an hour from the office of the *Agriculturist;* and to all such we will be happy to show our buildings, and give such information as is in our power.

Cultivate the Corn.

Constant cultivation cannot be too strongly urged for the corn crop. As soon as the blade appears above ground, pass through the rows with a harrow made for the purpose, or with the cultivator. Constant stirring of the soil will destroy the young weeds and push the corn ahead. A week thus gained may save the crop from an injurious frost when near ripening. An excellent implement for this purpose is Shares' horse-hoe; with it a careful hand may cut out the weeds to within an inch of the growing corn. By going twice in a row the crop may be effectually hoed, and much hand-weeding saved. The soil does not need stirring deeply; one inch is sufficient; deeper would injure the corn roots, which love to spread near the surface. For this reason all deep cultivation should be avoided. The surface should be kept level; the crop will thrive better than by burying the roots under a ridge of soil; therefore, keep the plow out of the cornfield. This crop requires heat and moisture, and a level, mellow, porous surface will secure these. A soil packed with rain and baked by the hot sun, cannot be endured; therefore, if a heavy rain should occur, followed by dry weather, turn in at once to the exclusion of all else, and break up this crust. This may be done safely even after the corn is in tassel. With level and shallow cultivation no check will be given, and good results will follow. The roots will be uninjured. It is the disturbance of the roots, when the plant is in blossom, that checks the growth and injures the corn. Corn need not be laid by until the rows become so close that the horse can no longer pass through without breaking down the stalks. Permit only three stalks to a hill. If planted three feet apart each way, with one fair ear to each stalk, seventy bushels of shelled corn per acre may be counted on. Better cultivate five acres well, than to work and grow weary over twenty acres, and get but fifteen bushels per acre for your pay.

An Egg Farm.

BY H. H. STODDARD.—*Second Article.*

A location near a city secures the best advantages. An article produced daily the year through, and which is prized for being fresh, should be raised as close to a market as possible. Thus the highest rates may be obtained, the special aim being to supply the demand for better eggs than any can be that are packed and sent great distances. Under the system which now supplies to a great extent eastern cities, there is the time spent in collecting eggs from various sources, to which must be added the time for transportation, and the time they are in the dealer's hands after arrival. Then the jarring is more or less injurious, and after it, eggs will keep but a little while. They pass through so many hands, that no one in particular is responsible for the character of the article. Under our plan eggs are delivered directly to consumers, families being visited regularly once a week. The egg-route has this advantage over a milk-route, that it need not be traversed so often, only a sixth of the whole being traveled daily; thus the expense of delivery is not great. As a team must be sent to town every day to collect waste bits from the meat markets, eggs can be sent, when only a day or two laid, with no extra trouble. If disposed of at stores, an arrangement should be made with the dealer whereby they may be kept in a separate lot, and sold under the name of the producer. Consumers readily appreciate eggs, butter, or other produce that comes from a regular responsible source. When a lot is mixed with lots from other farms, its individuality is lost; if good, it may only be helping to sell the poor article of somebody else, and the producer does not reap the benefits of his pains in increased custom. No produce can be supplied to city dwellers to better mutual advantage to seller and buyer, than new-laid eggs delivered direct, the dubious ones now in the market causing much loss and vexation. Poultry farms may be established at the West, and have the benefits of cheap land and grain; or at the South, where the season is earlier, and water transportation available. But the value of manure at the East is so great, that it is more economical to bring grain here from the West than eggs; the latter being so trouble-

some to send by rail. Butcher's waste, procured fresh, being almost absolutely necessary, is an important consideration in favor of proximity to a city. When it is seen that high prices for eggs depends on their being produced near by and delivered fresh, and that the *labor* is no greater to raise them close by the market, than at a distance at lower rates, with an additional deduction for transportation and breakage, we believe it must be admitted that the best place is, on the whole, near an eastern city. The site should not be far from a railroad freight depot or wharf. The amount of Western grain needed is large. Hauling this many miles by team is too costly. Enriching ground at the east by feeding out grain from the prairies, is an indirect way of importing their rich mold. Therefore, we take care that this importation is judiciously contrived. A mill near, for grinding, is desirable. A tract of arable land may be found (though rarely), surrounded on all sides by either woods, swamps, or rocky pastures, so that there need be no danger of the fowls straying into tilled fields of adjoining proprietors. In case such a farm could be procured, the great expense of a fowl-proof fence all around it would be saved. If the tract is unfortunately bounded by cultivated lands, then it must be so large and of such cheap quality, that a border, 20 or 30 rods wide, may be afforded to be kept in permanent pasture. The land should be upon a slope, for there must be a quick surface drainage after heavy rains; but the pitch should not be so steep as to prevent easy wagoning. A southward inclination gives a proper sunny exposure; and if there is a belt of woods on the north to break the winds, so much the better. If near swamps, sea-marshes, or damp river valleys, the site should be so elevated as to be out of the reach of the worst raw chilling fogs. We have enumerated all the above qualifications as necessary to a site for an egg farm. Their combination with certain essentials of soil which we are about to state, make the matter of selection one of considerable difficulty. Many more important points are to be attended to than in choosing a place for ordinary farming or gardening.

The soil should be adapted to cultivation. Those who advocate a waste tract make a great mistake, in our opinion. Every rood should be capable of cultivation, and rocky or bushy land avoided. Shade to be artificially provided at a small cost in a manner to be hereafter described. It is necessary to raise crops in order to get the full advantage of the manure. It exceeds in value that made by any other domestic animal, because from rich food more thoroughly digested than is the case with quadrupeds. The scrapings from the roosts might be carried to another farm, it is true, but the nearer they are applied the less labor; and the droppings where fowls range, and at every coop of small chickens, etc., are too valuable to be lost, and cannot be gathered up save by the roots of plants on the spot. In order to distract attention from the main business as little as possible, crops of the simplest management should be mostly grown, and only those that can be consumed by the establishment; grass, cabbages, lettuce, onions, potatoes, beets, and other roots, large quantities of oat or rye straw, and the balance, grains of various sorts, corn especially being always in order. The principle of division of labor, carried out to full extent, would forbid our raising crops at all, were we able to gather all the manure and sell it for what it is really worth. But, as we have seen, much would be wasted unless there is tillage, and there is no price established for such manure; and if there were, it is under our system all immediately mixed with earth, so that the amount could only be guessed at. The quality of the soil may be poor, or worn out at the start, thus securing cheapness; but it should be of a sort that it would pay to apply valuable manure to. For the sake of the health of the birds, choose a warm, dry soil. Land, quickly dry after rains, is the kind; and another test is, whether it is ready for the plow early in spring. If it will produce peas or watermelons earlier than common, we are not far wrong. It should not be clayey or gravelly, but a sandy loam. Gravel for a subsoil, low enough down to never be reached by the plow, would be excellent, making a natural underdrainage; but gravel at the surface troubles the fowls in their rolling and dusting. A supply of white gravel for the use of the birds should be screened to a proper size at some other place, and hauled to the spot, and put in boxes for the use of the birds. The soil should answer for dry earth for the roosts and for dust-baths, the loam being of a sort easily reduced to an impalpable powder. This is important, because we depend upon pulverized dry earth all through the business, to secure the cleanliness and health of the birds with the *least possible labor*. A great deal is said in poultry books and papers about the importance of cleaning the roosts frequently. We do not clean ours oftener than once in three or four months. The labor of going the rounds daily in a large establishment, thoroughly scraping floors, and removing manure, would be enormous. We set all our fowl-houses on a ridge of earth thrown up, by plowing several times toward the center, and surround with a shallow ditch for surface drainage after heavy rains. Thus we secure dryness, *wet* being the foe that must be kept from the fowls at every stage. Then in winter a bed of dry earth, six inches deep, is put inside the houses instead of a floor, and a couple of inches added monthly if needed. The birds may be depended upon to cover their own droppings, not only daily but hourly, when not at roost, a thick cloud of dust being raised every little while. The houses will always be freer from taint than if floors were used without dry earth, and scrubbed with soap and sand three times a day.

As it is impossible to raise any crop on vines, stalks, or trees above ground or below it, that hens will not damage, crops are put on one-half of the ground each year, and the fowls on the other half. Movable fowl-houses are used exclusively, with the exception of some large ones for hatching-rooms. By building small, light, and low, with strong sills made on purpose for runners, the houses may be moved every spring by an ordinary team, to the section tilled the previous summer. The distance traveled in transferring 100 fowl-houses, from one 60-acre lot to another, is one-third of a mile for each building, and back with no load. The amount of labor is much less than would be involved in hauling the manure, mixed with dry earth, from the buildings. The moving is accomplished systematically; the fowls belonging to a building being all moved in one flock in a large box made on purpose, in which they are quietly entrapped when attempting to leave their house in the morning by placing it adjoining, after which the box is darkened and drawn upon runners, on which it stands, to the new station. On arriving they are immediately allowed to escape into a spare house, shaped and colored like the one they left, placed beforehand, when they are ready to commence their day as usual, the whole operation of removal occupying only a few minutes. Besides this yearly moving, each building is moved every few days during spring, summer, and fall, its length only. Thus a fresh spot is secured, and to prevent all taint and uncleanliness, as well as to keep the manure safe for next year's crops, an implement like a harrow, with teeth like a horse-hoe, is drawn over the spot where it stood. The buildings are all moved in regular order in the same direction, so as to keep the same distances apart; then back again over another strip of ground, so as to fertilize the whole lot in the course of the season. The frequent turning of the soil not only keeps it sweet, but provides what fowls are so fond of—a place to scratch for insects, and roll and dust themselves in dry weather. The crop of weeds that will constantly appear in summer must be as constantly turned under; and whatever advantage there may be in green crops for manure will be secured; thus the enriching and pulverizing of the ground will fit it for large crops. It need not lie altogether fallow either, for a few small spots may be sown thickly with lettuce, cabbages, or other plants that fowls will eat, and protected until partly grown, by movable lath-fences or wire-netting, after which they may be allowed to help themselves. Oats may be sown in strips also; and whether the fowls scratch up and eat the seed in spring, or forage upon the ripened grain, no matter. It is only necessary to compare the amount of labor spent in spading the ground in yards, to keep it fresh, with this way of using team and plow, to see the superiority of the latter method.

Ogden Farm Papers.—No. 18.

Up to this time (April 25th), we have had such weather as I have never known before; the winter ended, virtually, on the 22nd of February; the frost was all out of the ground on the 15th of March; and from that time to this there has been little interruption to out-door work. My small grain and grass are all in (20 acres), potatoes are planted, and the land is plowed for root crops and for corn. In fact, the work has gone on so smoothly, that I fairly forgot the reason for it, until a few days ago, as I walked across a neighbor's field (a part of the same slope). Then the "squash" of the sod brought back the old times when we first took hold, and before the land was drained, and when it was sure to be the middle of June before we could depend with any certainty on getting the land in fit condition for corn planting. Half a day's rain would soak us full, and it would take four or five days of drying weather to make the ground fit for teams. By that time probably another rain would set us back again. This year we commenced plowing the first week in April, and could have commenced the last week in March; and although we have had several heavy rains since then, which set the drains flowing to their full capacity, the land would get in good condition within twenty-four hours after the rain stopped, and I am satisfied that we have been able to work four times as many hours as we could have done were the land not drained. The value of being able to work twenty days in April instead of five days, no farmer who knows the importance of taking his "stitch in time," need be told. We shall feel the benefit of the early start throughout the whole season. With ordinary weather from now until the end of June, we shall get at

least twice as much work out of our men and teams, as our predecessor could have done, to say nothing of the great advantage to crops of the absence of superabundant moisture.

We have this spring seeded down one section of the farm (9½ acres) as permanent mowing land, partly because it will always be well to have the grass, and partly because that section is the most conspicuous one; and we believe in having our best foot forward with the boot well polished. Three acres are seeded with a mixture of vetches, peas, and oats, and six with oats alone for soiling, to be followed with late fodder corn sowed in drills. About thirteen acres more will be used for the main crop of fodder corn put in early, and four acres are well advanced with winter rye, which will be fit for the scythe by the 10th of May, and again early in June, when fodder corn will probably be sown on that as well.

We are now preparing about five acres for carrots and mangels. The land is that which was plowed so deeply year before last, that we practically lost the crop of two seasons; but it is now turning up in beautiful condition, the ugly blue clay having been oxidized to a yellow cast, and the whole being as mellow as an ash heap. If, as I believe, a good top-dressing of manure will hasten the germination of the seed and strengthen the early growth, the roots will get down to the top soil—that was buried a foot deep two years ago—and will carry us safely through any drouth we are likely to have, proving that brother Greeley is right in his theory of deep plowing, if we only give him time; perhaps though it will be safer to wait until the crop is made, before forming a final opinion.

In growing my carrots and mangels, I shall pursue a course different from that generally adopted, but one which ample experience has shown to be best. The land is now plowed, and will soon be harrowed. It had a good coating of stable manure last year, and will receive more this year. As soon as weeds begin to show, it will be harrowed again; and as often as they appear, the operation will be repeated until planting time. The carrots (these do not bear transplanting well) will not be planted until the first week in June, when, under the influence of the warm weather, they will come up in a few days, instead of lying from two weeks to a month as they do when planted early in May, and they will have a fair chance in competition with the few weeds that will remain after the repeated harrowing. Immediately before the sowing of the seed, a heavy dressing of some artificial fertilizer will be harrowed in. The subsequent cultivation of this crop will be according to the usual custom.

The mangel seeds will be sown in a seed-bed early in May, and will be transplanted somewhere about the 20th of June; the field being kept clean by repeated harrowing to the very last, and artificial manure being applied at the last harrowing. As I have before stated, this is not only the best, but it is much the cheapest way to grow this crop; and these directions are not untimely, for the seed may be sown early in June, and the transplanting postponed until the middle of July, and a good crop still be taken, if the land is rich and the season not unusually dry. The idea of transplanting several acres of beets is a formidable one only to those who know nothing about it. It is a comparatively easy job to hand-weed the plants in a small seed-bed; they will need no thinning; and it is not half the work to set out a row of mangels at intervals of fifteen inches, that it would be to go over the same length of row, and weed and thin it by hand, if the seed were planted in place. Then, again, the seed must be planted at a time when weeds grow profusely, and there must be a good month's fight with them before the mangels gain the mastery. Under the transplanting system, the harrow does all the early work of weeding; and the plants that are set out, being already from half an inch to an inch in diameter, grow vigorously from the start, and before weeds can grow a quarter of an inch in hight, they will bear horse-hoeing or hand-hoeing as well as corn or potatoes. The ease of transplanting depends very much on how you set about it.

If a man takes a lot of plants in a basket, digs a hole with a trowel, sets down his basket and picks out a plant at every step, he will soon get sick of his undertaking. Our method is the following: all hands pull plants from the seed-bed until enough are taken for the day's work. As they pull them, they cut off the tap roots and shorten the leaves to about four inches, laying them in small heaps with the tops all in one direction. These heaps are gathered by the double handful, packed in regular order in larger heaps, and covered with a horse-blanket. A puddle of cow manure, superphosphate or bone-dust, clay and water, is prepared in a tub near the heap. When plants enough are made ready, a force of three men and two boys is divided as follows: one man dips the roots in the puddle and puts the plants into baskets, which he carries to convenient parts of the field. The two boys station themselves near the center of the field, and the two men, one at each end of it, with a long line stretched between them. Each has a marking-stick, 27 inches long, to mark the distance of the rows. The line is stretched at one side of the field in the position of the first row, and is made fast to stakes. The boys then start from the middle of the line and the men from the ends, and walk *on the line* until they meet (each making one-fourth of the whole distance): they then run (not walk) back to their starting points. The men now measure off 27 inches, and stretch the line for the next row; and so on. The line, of course, is perfectly straight, and the impression is sufficient to be easily seen. When five or six lines are marked, the planting is commenced. Each boy takes a basket of plants and walks backward ahead of his man, and drops the plants with the tops toward the planter's left hand at regular intervals of about 15 inches. The man has in his right hand a "dibber" (shown in the engraving, fig. 1); with this he makes a hole where the plant is to stand; then taking the plant in his left hand, he sets it in its place and gives a sidelong thrust with the dibber, so as to press the earth firmly about the *lower part* of the plant (not the crown): strikes his dibber into the next spot, and so on. When the five or six rows are planted, and the backs are a little tired with stooping, it is a relief to stop and mark off a few more rows; but the regular order of the operations is kept up without stopping, except for dinner, until the day's work on the field is finished. Of course the rapidity with which the planting is done depends on the experience and dexterity of the planter. It takes from 13,000 to 15,000 plants for an acre; and I have one man who, with a good boy to drop, can easily set an acre in two days. The same man and boy, however skilful they might be, would not thoroughly finger-weed, and thin out an acre of mangels, grown in the ordinary way, in twice the time. In pulling the plants, enough are left in the seed-bed to grow for a crop; but it is noticeable that these never grow nearly so large (although the land is usually richer) as do those that are transplanted.

As some of our land is now in sufficiently good condition for the trial, I am going to make the effort to raise a few acres of potatoes and cabbages for sale, using the money to buy cheaper cattle food. This is a safe thing to do, for we always have an anchor to windward, inasmuch as potatoes and cabbages can always be fed out if there is no market, while now and then, a good profit could be taken. For instance, if I had raised 10 acres of cabbages last year—a fair average crop—I could have sold them for enough to pay the original cost of the land, and the cost of draining and other improvements that have been put upon it. So long as cabbages can be raised at a cost that *their feeding value* will warrant, I propose always to be in a position to take advantage of such a market as that of last winter—and I think others may safely do the same. To a certain extent the same thing is true with regard to turnips and other roots. *They pay to raise*, as cattle feed alone, and at times they may be sold for five times their feeding value; then let them go and turn the money (or a part of it) into bran and meal.

Riding on Horseback.—No. 4.

Even more important than the Saddle—so far as the management of the horse is concerned—is the apparatus by which his movements are to be regulated and restrained: that is, the "Bit." The various forms of bit sold by saddlers, even in the largest cities, are almost invariably faulty. They are made without much consideration of the use to which they are to be put, and often fail to produce much effect, except as a means of torturing the horse into a kind of sullen obedience. It is one of the offices of the bit to produce pain; but only when the horse resists its action, and then only so much as may be necessary to secure submission to the rider's will. As he will instinctively yield to a pressure that would cause pain if he did not yield, and as, if the pain is produced from both directions, he will try so to move as to escape from that which is the more intense; it is of the greatest importance that the bit be constructed in such a manner, and so placed in the mouth, as to impel his head in the right direction—that is, toward the rider's hand.

The bit rests against the "bars" of the lower jaw (those parts of the jaw where there are no teeth). It has two levers, one at each side; one end of each of these levers projects upward, carrying the chain that passes under the chin, and the other ends project downward to receive the reins, by which the force is to be applied. The object is to have the *chin* serve as a fulcrum, so that when a strain is applied to the lower ends of the levers, the pressure on the bars will be sufficiently suggestive of pain to cause the horse to draw in his head. If, from bad construction or improper adjustment, the chain becomes more painful than the bit, the horse will withstand the lesser pain in his mouth to escape the greater pain behind it, and will thrust out his head in obedience to the real impulsion. In this case the *bit* is virtually the

fulcrum, and the stronger impression is produced by the chain. It is in the principle herein suggested that we are to seek the solution of the greatest difficulties connected with proper bitting; and its close observance is necessary to complete success. In nine cases out of ten the arrangement of the bit is so faulty, that it is impossible for it to act as it should, and instead of inducing obedience, we arouse opposition. The reason for the prejudice against curb-bits—among those who consider them instruments of torture—is, that as they are generally used, they *are* instruments of torture. It is impossible to ride really well on an average horse without a curb-bit; but it is impossible to ride well on any horse, unless the curb-bit is properly made and properly adjusted. Its importance is sufficient to justify a careful explanation, for which purpose the following illustration, figure 1, is taken from Major Dwyer's book.

The point, *d*, shows the position of the bit in the mouth; *e*, is what is known as the "chin-groove," which is easily seen on any horse. The head-stall should in all cases be of such a length as to allow the bit, *d*, to lie exactly opposite the chin-groove. This is the only place where it will not do more harm than good, unless the horse is remarkably well broken; *f*, is the point where the rein is attached, at the end of the lower arm of the lever; *a*, *b*, *c*, represent the ends of the upper arms of the lever, showing what would be their action if they were of different lengths. These are the points where the curb chain is attached to the bit. The rule which has been established by experience is, that this upper arm of the lever should be exactly as long as the perpendicular distance from *d* to *e*. This allows the chain, *b*, *e*, to lie easily and naturally in the chin-groove without

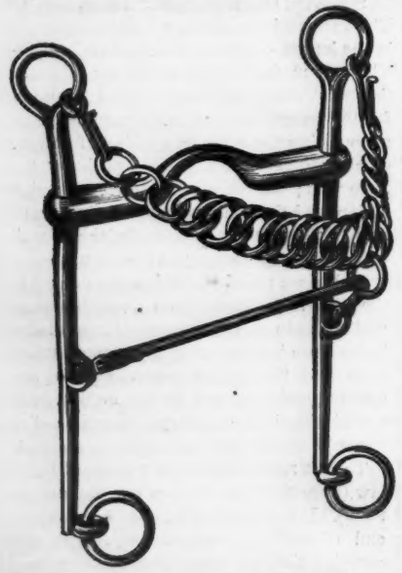


Fig. 2.—"BAUCHER" BIT.

pinching, when the rein is held lightly, yet to exercise a strong leverage when the reins are drawn. For instance, when the point, *f*, is drawn back to the point, *h*, it will not be able to move much farther, and a strong pressure will be brought to bear on the mouth. If the upper arm of the lever were twice as long as the distance from *d* to *e* (reaching to *a*), the chain, *a e*, if hanging in the chin-groove, would have very little effect, except to pinch and torture the horse, producing the most pain upon the jawbone, just above the chin-groove, causing the horse to throw up his head to escape it. If, on the other hand, the upper arm of the lever were made only half as long as the distance from *d* to *e* (reaching to *c*), the chain would have very little effect, unless it were drawn so tight as to be uncomfortable even with a loose rein—so tight, indeed, that it would soon chafe the chin-groove and make that so painful, that

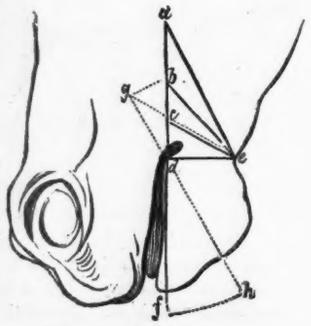


Fig. 1.—CURB-BITTING.

at the least touch of the rein the principal effect would be produced there rather than in the mouth, and the horse would again be caused to throw up his head.

If the upper arm of the lever is of the proper length, reaching to *b*, when the lower end of the lever is drawn back to *h*, the upper end will be advanced to *g*, and the chain will draw on the line *g* to *e*, drawing, almost exactly, at right angles to the jawbone at the chin-groove, bringing the chain flat against it, creating the least possible amount of pain there, and affording a firm fulcrum, from which force may be directly applied to the bars at the mouth.

The length of the lower levers need not be made so exactly according to rule. The longer they are, the more effect will be produced with a given amount of force applied to the reins. Perhaps a safe rule would be to make them twice as long as the upper arms of the levers. This is enough for the control of the worst cases, and more than this (as is usual), increases the difficulty of light handling. The construction of that part of the bit which lies in the horse's mouth, connecting the two side levers, is important. Its length should be just such as to allow the levers (which should be turned out a little at the top to make room for the leathers) to play freely over the sides of the face without chafing. The bit should not be too long, nor should the upper ends of the levers be too much turned out lest the chain be straightened out, and caused to rest only against the bones of the jaw; whereas it ought to follow closely around, touching the skin for at least three inches of its course. Curb-chains are made flat, so that when twisted into shape, they lie almost as smooth as a band of leather against the chin. The larger they are, and the larger the wire of which they are made, the easier and better they will be. They are attached by spring hooks to the eyes of the upper ends of the levers. The mouth-piece of the bit should also be of generous size in those parts that lie against the bars, being much less painful than if small. That part of the bit lying between the bars should be made of thinner iron and a little elevated, forming what is called the port or tongue-groove, preventing the horse from taking the pressure on his tongue (as he might do if the bit were straight), and thus becoming heavy or dull in the hand.

The lower ends of the levers or "branches" may be either straight or curved. If straight, they should have eyes a little above the points where the reins are attached, to carry what is called the lip-strap—a small leather that passes through a loose ring in the curb-chain, and is buckled to the lever on each side. The object of this strap is to prevent the horse from taking the branch of the bit in his teeth and destroying the effect of the curb—a trick that most horses soon learn, and which they know how to take advantage of. Fig. 2 represents what is called the "Baucher" bit, and is copied from one that the writer has had in use for many years.

To avoid the complication and cost of the lip-strap, the curbed branch (or lower lever) is adopted for army use; and there is no reason why it is not equally suitable for the use of civilians. It brings the iron in such a position that the horse cannot possibly get hold of it. This bit is shown in fig. 3, the "McClellan" bit.

The foregoing details will seem to those who are not familiar with the niceties of riding, to be needlessly minute and particular. Many a man will say that any bit is good enough for him—just give him a good strong pair of reins to hang on by (!) The proper reply to this is, that this article is not written so much for him (though he needs its information more than any one else, if he only knew it), but for those who really care to become good horsemen. No one can ride with pleasure on a horse that has a bee incessantly trying to sting him under the chin. His fear of the bee introduces a disturbing element that counteracts all our efforts to make him attend steadily to his duty; and an ill-fitting, badly placed bit causes hardly less disturbance.

There are many points to be attended to in the proper equipment of a saddle horse—nearly all of them points of minor detail—yet they are important details, too; for unless the rider's

Fig. 3.—"M'CLELLAN" BIT.

weight is properly placed, and unless he has the proper means for controlling and guiding his horse, there can be no comfort, or gracefulness, or pleasure for the man. There must also be a loss of endurance and smoothness of working for the animal; and as it costs no more, save in attention, to have things right than to have them wrong, there need be no excuse for failure in essential points.

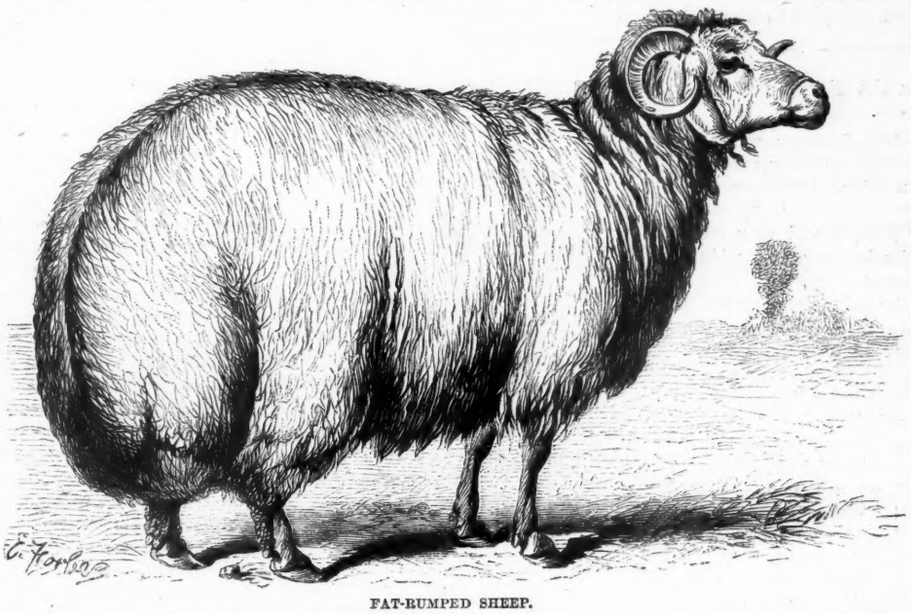
Note.—Our illustrations of the "McClellan" and the Mexican saddles in the April number were taken from articles in the saddler shops in New York. This must account for iron stirrups having been substituted for the wooden ones covered with leather that belong to those saddles.

Fat-tailed and Fat-rumped Sheep.

Sheep are so readily modified by breeding, as well as by the peculiarities of climate or the nature of their food, that naturalists are much puzzled as to the number of natural species. Sheep removed from a cool climate to a hot one lose their wool, and becoming covered with coarse hair, appear more like goats than like sheep. Some varieties with remarkable local deposits of fat are found in different countries. An Angola variety has curious masses of fat on the back of the head and beneath the jaws, which give the animal the appearance of wearing a large collar or ruff. Several countries possess breeds of sheep which have the tail enormously enlarged by a deposit of fat. One of these, an Asiatic one, has a tail containing twenty vertebræ, and so loaded with fat, that in order to preserve it from injury, it being considered a great delicacy, it is sometimes supported by a truck, which is dragged about by the animal.

The broad-tailed sheep of different and widely separated countries have generally pendulous ears, which are considered by Darwin to be a mark of long domestication. Some of them have four and even six horns, while others are hornless. The wool on these sheep is generally coarse and long, and hanging in thick patches. The Astrachan sheep belongs to this broad-tailed group. The coat of the young animal, killed before birth, is fine and frizzled, and is used as an ornamental fur.

In some countries there are breeds in which there is a great deposit of fat upon the hind-quarters near the tail, but the tail is most usually undeveloped, and in some of the fat-rumped varieties is entirely wanting. There are some breeds of this kind in Africa, where they are valued not only as furnishing a much-prized article of food, but for supplying tallow for domestic purposes. One of these African fat-rumped sheep is in the collection at Central Park, and we give an engraving of it from life. The fat-tailed sheep of Tartary and the Crimea, when taken to Russia, are said to lose their peculiar fatty development in a few generations. Were there a number of these fat-rumped sheep at the Park, it would be interesting to see if they retained their distinctive character in a climate, and with food so different from that to which the breed has been accustomed.



FAT-RUMPED SHEEP.

Meat-flies and Fly-blows.

A number of flies belonging to different genera pass their larva state as maggots in meat. Many times their presence is annoying and a cause of loss; but the damage they do us is probably offset by their rapid and beneficial work as scavengers, as they hasten the removal of animal matters, which might in their slow decay prove noxious. Some of these flesh-flies produce their young alive—an unusual thing with insects—and the maggots are ready to go to work at once without waiting the few hours required for the hatching of the eggs of some other species. Our viviparous flesh-flies belong to the genus *Sarcophaga*—flesh-eaters. It is stated upon the authority of Reaumur that a single female of the European Flesh-fly will produce as many as twenty thousand maggots. Our largest Flesh-fly is the *Sarcophaga Georgina*, it being about half an inch long. It is distinguished by its silvery white face and copper-colored eyes, between which there is an oblong square black spot. Its thorax or chest is gray, with seven black stripes. The Blue-bottle fly, *Musca Cæsar*, and the Meat-fly, *Musca vomitoria*, are better known; the one being of a blue-black, and the other of a brilliant blue-green color. These do not produce their young alive, but lay eggs, which are deposited upon meat and decaying animal substances, and are well-known as fly-blows. The eggs hatch in three or four hours, and the resulting maggots feed most ravenously, and grow with great rapidity. They attain their growth in three or four days, when they hide themselves in some crevice, or burrow in the earth and pass into the pupa state, from which they come out in a few days as perfect flies, and go on with the work of reproduction. The engraving illustrates the metamorphoses of flies of this kind, giving the maggot, the pupa, and the perfect insect. The meat-flies deposit their eggs not only in dead animal substances, but in the wounds of the living ones. During the late war the soldiers were subject to great suffering on this account, as it was frequently the case, that those who were left for some time before they could receive surgical attention, were found with their wounds filled with the devouring larvæ of the Meat-fly. Under the name of "gentles," the maggots of meat-flies are used as bait by fishermen, and the breeders of trout find them a most valuable food for the young fry. The maggots are obtained from the bone-boilers in large quantities; and we know of one fish-breeder who orders several barrels at a time for the purpose of

METAMORPHOSES OF THE FLESH-FLY.

feeding young trout. The salt and smoke of hams and bacon do not seem to be distasteful to the maggots of the meat-flies, and such articles should be kept where flies cannot enter, or be so thoroughly enwrapped in paper that there will be no chance for them to deposit their eggs.

Walks and Talks on the Farm—No. 90.

Our venerable friend, John Johnston, writes: "I will tell you how to eradicate docks, and no humbug, and charge nothing. Cut them off close to the ground when the tops are fully out, but the seed not fully formed, and they are done for. The stalk dies in the ground; but you must cut them so close to the ground that you leave no leaves on the stalk, else they will not die. About the end of June I found generally the best time to cut them; but it depends on the season. In pasture-fields, they are soon cut with a scythe. In wheat and meadows they have to be cut with a knife. Never mind trampling down a little wheat or timothy. You will save it all in getting rid of dock. I kill burdock by cutting off when the burs are formed, and putting a handful of salt on the top of the stalk." Mr. J. adds: "I found out how to kill docks by cutting clover early." This is encouraging, and is an additional reason for endeavoring to grow large crops of clover that *must* be cut early. Docks do not seed till the second year. If cut off the first year, the root will throw up several seed-stalks the next season, and the process seems to do more harm than good; but if the cutting is delayed till the second year, when the seed is partially formed and the plant nearly exhausted, I have no doubt Mr. J. is right in saying that it will die. We may assume that the only way to kill docks the first year is to pull them up by the roots, or else cut them below the crown; but the second year, cutting them after the seed is partially formed, is better than pulling.; for if pulled, there is so much vegetable matter stored up in the root, that the seed will ripen after the plant is pulled up. It is a capital thing for a farmer to get the idea fully established in his head that weeds *can be killed.* Many people seem to suppose that weeds spring spontaneously from the soil. And yet the soil can no more create a weed than it can create a man or a monkey. Kill all the roots in a soil and cause all the seeds to grow, and then kill the young plants, and you have land free from weeds. I do not suppose that this can be absolutely attained in practice, but a thorough conviction of its truth will stimulate our efforts. Our seasons are exceedingly favorable for the destruction of weeds, and yet one of the most marked characteristics of our agriculture is its weediness. The weeds carry off half our profits.

A gentleman in Tennessee, who has been engaged in other business, but who now wishes to turn farmer, writes me that he can get 5 acres of poor sandy land at a moderate rent for 10 years. With a little stable manure in the hill, he thinks the land would produce 75 or 100 bushels of peachblow potatoes per acre. But he has no manure, and he wants to know what is the cheapest fertilizer for him to buy: superphosphate at $60 per ton, Chicago blood at $55, bone-dust at $45, plaster at $20, cotton-seed at $15, or lime at 12 cents per bushel. He proposes to sow winter oats, and, when harvested, plant the land to potatoes, and thus grow two crops in a season. I am always sorry for such men. They are so enthusiastic and hopeful that it is far from pleasant to say any thing discouraging. "In all *labor* there is profit," but, strictly speaking, there is no profit in the mere possession of *land.* It gives one an opportunity to work. And the profit will be in proportion to the amount, skill, judgment, and efficiency of the labor, and not in proportion to the land. Now, a man cannot spend labor enough on five acres of ordinary oats to enable him to earn a living. He must raise something that requires more labor. The land is near a city where there is probably a demand for vegetables, small fruits, etc. There must be stable manure to be sold in the city, and this at anything less than $1.50 per ton, would be far cheaper than any of the fertilizers named. Cotton-seed would be the next cheapest. I would mix 20 tons of manure and 1 ton of cotton-seed together in a heap, keep it moist, cover it with soil or sods, and let it rot, turning it occasionally, to accelerate fermentation and to make it fine. Put this amount on an acre, and then plant something that requires rich land and much labor and attention, and as much money can be made from five acres as from fifty.

"Deacon," I said, last night, "listen to this letter from a farmer in New Jersey: 'I have a farm on which there are thousands of cords of muck (not peat); I wish to know how to use it to the best advantage; when and how to get it out; and what chemicals have proved the best to remove the sourness and make it good manure? I have Dana's "Muck Manual," but want the latest information; and I inclose the small sum of ten dollars, which you can use, if you please, to accomplish this end.'"

"There, now, Deacon, is a man who appreciates an agricultural editor. If a short article is worth $10 to one reader of the *Agriculturist,* what is the information contained in a whole volume worth to its half million readers? The ten dollars have been returned; but I for one feel grateful for this appreciation of the labors of an agricultural editor. We get double the abuse, and not half the credit we deserve."

"Don't know about that," said the Deacon, dryly, "but what are you going to tell him? I 've been thinking of getting out some muck; but somehow I can never find time to do it."

"It is just so with me. I have thousands of loads of splendid muck in the swamp, and have hitherto excused myself for not using it because the land was so wet. But as soon as we get the ditch through it, I mean to go at the work in earnest. An average sample of air-dried peat contains more than twice as much nitrogen as stable manure; and there can be no doubt of its value. The trouble is, that the plant-food it contains is in a comparatively insoluble condition. It is 'sour,' but merely neutralizing the acids is not enough. The aim should be to decompose it by fermentation. Any thing that will accomplish this will render the plant-food available. The first thing is to get rid of the water. Throw up the muck in June or July, and turn it during the hot weather, in July or August. I would then put about a bushel of lime to 20 or 25 bushels of muck; and, in turning it over to mix the lime with it, would aim to make the heap as compact as possible; and before the fall rains set in, I would cover it with something to throw off the water. In the winter, draw this prepared muck to the yard, and mix it with the manure—say one load of muck to one load of manure. In my case, I should use some of the earliest-made manure and muck for root crops in May or June; and to get it in good condition, the heap should be turned, if possible, during the winter, and again in the spring; and if bone-dust, or blood, or woollen waste, or any thing that would favor rapid decomposition, could be obtained, I would mix it with the heap a month or six weeks before using—the earlier the better."

"But," remarks the Deacon, "I thought lime would set free the ammonia. I know lime and ashes are good to mix with the muck when about to apply it directly to the land, but I never heard of mixing lime with muck, that was to be afterwards mixed with stable-manure."

Exactly. That is precisely where my plan differs from that generally recommended. I have no fear of the ammonia escaping from the heap. The more ammonia we can set free in the heap the better, provided it does not escape; and if muck enough is used, there is no sort of danger.

In my case, the bulk of the manure would be kept in the heap during the summer, and be drawn out on to the grass-land in the fall, to be plowed under for corn or potatoes the next spring. A much larger proportion of muck could be used with the manure in this case. It is true that I have had comparatively little experience in the use of muck; and I wish some of the readers of the *Agriculturist* would give the Deacon and me some hints as to the most economical manner of handling and using it.

The Deacon never gets excited about any thing; at any rate, he never shows it. But he is quite enthusiastic in his praise of my grade Cotswold lambs. "I always told you," he says, "that cross-bred animals are more profitable than thorough-breds." The truth is, *I* told the Deacon so; and it is so far complimentary to find that he has adopted my views, in part, even though he claims them for his own. I say "in part," because he does not clearly understand the point I insist upon in crossing. I want a thorough-bred ram to cross with common, hardy, vigorous ewes; whereas the Deacon can hardly get rid of the idea that a cross-bred ram, provided he is as large and well-formed as the thorough-bred is just as good, whereas I *know* that such is not the case. We have got, up to this time, 67 lambs from 60 common Merino ewes from a thorough-bred Cotswold. They are the healthiest and hardiest lambs I ever saw. We have had not the slightest trouble in any way, and have lost but one lamb in the whole lot. One of them weighed, when dropped, 12½ lbs., and we had many nearly, or quite, as large, and the shepherd says some that were larger. This afternoon, April 23d, we weighed five of these grade lambs that are from eight to nine weeks old. They weighed respectively 50, 46½, 52½, 47½, and 46½ lbs., or an average of 49 lbs. each. Is not that pretty good for ewes that at 4 years old only weighed 80 lbs., and that I bought for 3 cents per lb. The ewes have had nothing but dry feed, and as soon as they get some grass, I expect the lambs to do even better still. We allow the lambs all the corn, meal, and bran they will eat, in small troughs separate from the ewes; but they do not eat half as much as I wish they would—not to exceed 10 lbs. a day among the whole lot. This is the only fault I have to find with them. I think lambs from Canada ewes would eat more meal, and consequently fat better; but some of my neighbors who have Canada ewes, have no better lambs than these of mine from Merino ewes. Liberal feeding, and a thorough-bred ram, is the secret in raising good lambs for the butcher.

I think that picture of Shropshire-Down sheep in the April number of the *Agriculturist* is the best I ever saw; and I am glad these magnificent sheep are to be in Central Park. I suppose the design is to keep specimens of all the leading breeds of sheep. Until 1857, the Shropshire-Downs were comparatively unknown. The Royal Agricultural Society that year offered a special price for the best short-wooled sheep, not South-Down. This brought out the Shropshire-Down sheep, and the late George Adney, of Harley, was the most successful exhibitor, winning the first prize, if I mistake not, with "Old Patentee," one of the ancestors of the Central Park sheep. I once spent several days on Mr. Adney's farm. He was a good specimen, though rather a rough one, of the plain, practical English farmer. He had then a splendid flock of sheep, but I question if the thought ever occurred to him that he and his sheep would ever become celebrated. He worked for years on his quiet farm, improving his flock, without dreaming of fame or fortune. The success of the Shropshire sheep at the "Royal" took England by surprise, but I question if any one was more surprised than Adney himself. Previous to the fair, these sheep could have been bought for the price of mutton; afterwards they were worth whatever the breeders chose to ask. "George," as he was familiarly called, was a "character," and many stories are told of him. He would not sell his ewes to any of his neighbors. Lord Wenlock had an estate in the neighborhood, but was personally unknown to Mr. Adney. One day a gentleman called to look at Mr. Adney's sheep, and said he would like to buy some. Not knowing him, "George" thought he was a stranger, and told him he would sell him some; "but," said he, "I shall want the money down." The stranger, who proved to be a capital judge, selected out a lot of good ewes, and the price was agreed upon, and he stepped into the house to pay for them. He wrote out a check, signed "Wenlock," and handed it to Mr. Adney. "You don't call this money," said George. "Wenlock is the name of a town; anybody can sign a check Wenlock." "But that is my name," replied the stranger. "I am Lord Wenlock." "You ben, ben you?" said George; "then you can't have none of my sheep." At one of the fairs where Mr. Adney exhibited his sheep, the late Prince Albert visited the show grounds before the general public was admitted. Coming with a number of other distinguished persons to Mr. Adney's pen, he stopped to examine the sheep, and called particular attention to their peculiar merits. George was greatly excited, and as the Prince dwelt first on the importance of this "point," and then on that, he could hardly control himself. At length the Prince alluded in high praise to one of the best features of the sheep, when George could hold in no longer, but gave the Prince a hearty slap on the back, exclaiming, "You ben a judge of sheep, you ben."

The Shropshire-Downs are of a mixed origin, and it is doubtful whether they are entitled to be regarded as a thoroughly established breed. They have many excellent points—will fat more easily than the South-Downs, and their mutton is of better quality than the Leicesters, though not equal in this respect, to the South-Downs, while their wool is now not as valuable as that of the Leicesters, Lincolns and Cotswolds. There have been several importations of Shropshire-Downs into the United States and Canada during the last dozen years, but I do not know how they have succeeded.

The Deacon has always condemned my steel plows; and I do not know of anything that surprised or pleased me more than to find that this spring the Deacon was plowing with a steel plow. He still contends that for plowing hard, dry land, the cast-iron plow is the best; "but," said he, "I must say I never had a handier plow for putting in spring crops." I shall next expect to see the Deacon bringing home a load of two-inch pipe tiles, and commence ditching. He has very decided opinions of his own, but, like other sensible men, the Deacon will adopt a new thing when he is convinced of its value.

My English friend is satisfied that no ammonia is escaping from the manure heap, and yet it is not covered with soil or any other absorbent. We pump up the water that soaks into the tank back on to the heap, and I never saw manure ferment better. There can be no loss either from leaching or evaporation, and it will be in capital condition for root crops or for top-dressing meadow land after hay harvest.

The high wages and low price of produce are having their legitimate effect. Farmers are employing much less labor than formerly, and putting in fewer crops. And I never knew so many farms being let out to "work on shares." In the present condition of affairs, this is perhaps the better plan, but rented farms invariably deteriorate. As long as labor is so high, we must lessen the quantity of plowed land, and especially of hoed crops, and increase the area in grass and clover. This will make the land richer, and in the end we shall grow as much grain on far less land, and consequently with far less labor. I think this will be the solution of the difficulty.

Manure in Illinois.

A correspondent of the *American Agriculturist* at Decatur, Ill., writes: "I presume you do not often have Illinois farmers write you concerning manure. I have for three years hauled all the manure I make upon my meadows, and find that the amount of grass is nearly doubled; and not only this, but during our dry, hot time in summer, the grass on land manured looks greener, and the ground seems to retain moisture better. From this experience I am led to think that our land, which in grass (clover and timothy), usually requires three acres to the bullock, can be improved so that two acres will carry a bullock, and do it finely; and I would ask you if, in the event I continued manuring my apparently rich, black prairie soil, there is a likelihood of one acre carrying a steer? On corn ground the manure appears to show its effect more the second year than the first, and, as we corn our land constantly, is there not a great chance for all of it to need manure? How much some of your Eastern farmers would like to be situated as we are. A number of men here buy and feed many thousand bushels corn, and feed it on their farm with what they raise, and the manure from all could be applied to the grass and corn ground; but few make any use of it."

Remarks.—We should be glad to hear from our Western readers in answer to these questions. Top dressing is unquestionably a grand means of enriching grass land; and the advantage is not merely the absolutely greater quantity produced during the season, but in the improved quality of the grass, and in giving a more steady growth throughout the season. We have observed the same effects as our correspondent. Top-dressed grass will keep green, and afford a fair bite during periods of drouth, when the grass on ordinary pastures is dried up. We do not think that the grass on the rich, black prairie soils is likely to be as fattening as that grown on the rich, clay, permanent pastures, known as "bullock land." But where corn is as cheap as it usually is in Illinois, this defect may be advantageously obviated by feeding the steers a little corn every day while grazing. We believe the time is coming if not already come, when the farmers of the West will find it highly justifiable to save and apply all the manure they can make.—ED.

Large Turkeys and Turkey Breeding.

A passion for extra size is one of the weaknesses of the American mind. Fat men's clubs show the national drift. In what other nation would it be possible to associate men simply on their avoirdupois merit? Where else should a man be most highly considered, because he could show the most adipose matter laid upon his bones? In the decisions given at our fairs, weight is not only an important item, but the one thing needful. In a scale of one hundred points, weight would be the equivalent of fifty, in the minds of most judges. It is the big swine, the big pumpkin, and the largest fat ox that takes the premium. Economy of fattening, or the process of production, is seldom inquired after. The same bad taste is likely to affect the decisions in our poultry shows, unless the managers insist upon a more wholesome standard. A large, well-developed bird, of maximum size, is desirable. A monster is not, for any conceivable purpose, except to excite wonder and draw the crowd. We raise poultry chiefly for the table. What the producer wants in his stock is good quality of flesh, early maturity, and capacity to make the most flesh out of a given amount of food. A turkey, weighing fifteen pounds, is just as good for the table as one weighing thirty; and most housekeepers would prefer them under twelve pounds. In most markets the lighter weights would bring the higher price. It is only in the region of large hotels and boarding-houses that the very large birds bring an extra price. For what object, then, do we want large breeding birds, and how large do we want them? It takes about three years for a turkey to attain his largest weight. If at twelve months a gobbler reach thirty pounds live weight, at two years he would reach thirty-five, and at three years forty, or a little more. But it is rare to get a male bird above forty pounds, and then it is generally by some process of stuffing that destroys his stamina and oftentimes his life. This weight is excelled sometimes; but about the time one thinks he is almost sure of a forty-five pounder, the prodigy sickens and dies. It may be assumed, then, that forty pounds is about the limit to which a vigorous turkey-cock may be safely carried, and from half to two-thirds of that weight is the last safe limit for the hens. With breeders of this size, and a little under, we will get large, strong chicks, that will economize food, and mature earlier than the offspring of common-sized birds. No bird yields more quickly to treatment than the turkey. The influence of a large-sized gobbler in a flock is immediately visible in the increased size of the chicks. The introduction of wild blood increases the hardiness of the young. A larger proportion of the eggs will hatch, and a much larger number of young will be likely to grow

up. With a little painstaking it is quite easy to breed to any desired shade of plumage.

Mr. Crozier's Pig-pens.

Mr. Wm. Crozier, of Beacon Stock-Farm, Northport, L. I., has a range of pig-pens seventy

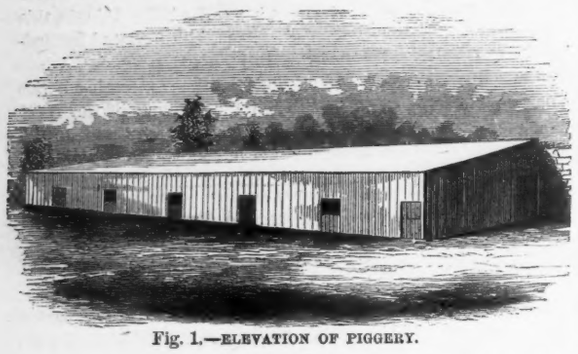


Fig. 1.—ELEVATION OF PIGGERY.

feet long, and he is so well pleased with the plan that he proposes to enlarge it to two hundred feet. The elevation (fig. 1), the ground plan (fig. 2), and a view of the interior of the building (fig. 3), show the simple arrangement. The building is placed against a bank, which has a brick retaining wall that answers as the rear wall of the building, and is 9 feet high. The

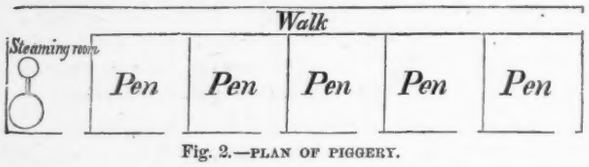


Fig. 2.—PLAN OF PIGGERY.

building is 16 feet wide, with the front side 6½ feet high. The pens (see fig. 2) are 12 × 10 feet, and 3 feet high, with a 4-foot walk at the rear of them. The doors, of which each pen has one opening into the yard, are in halves. The upper half may be left open to admit light and air, while the lower one is kept closed, if it be desired, to prevent egress. At one end of the

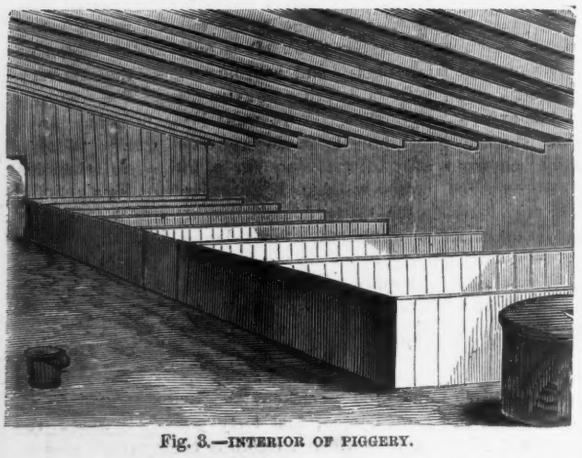


Fig. 3.—INTERIOR OF PIGGERY.

building is a room furnished with apparatus for steaming food. The feeding is done from the walk, the food being placed in small portable troughs, which can be readily cleaned.

Blue-grass.—(*Poa pratensis*).

I have been so often asked about this grass, that I say a word about its history and propagation. In the latitude of Virginia, say from thirty-five to thirty-eight degrees north, the *Poa Pratensis*, English "Green-sward," or Kentucky "Blue-grass," assumes so dark a hue, that it has been named Blue-grass. The soil of Kentucky is so well adapted to its culture, that it has been supposed to be a species peculiar to that State, where I have seen it from two to three feet high in the seed-stalks, with long parallel, sided blades two-thirds as tall. I sent a specimen to a competent botanist, but he pronounced it the same as that bearing all the above names. It is very widely diffused over the northern parts of the world. I have seen it at St. Paul, in Minnesota, in Cleveland, Ohio, in England, all Northern Europe, and as far as St. Petersburg, Russia, sixty degrees north latitude. In Tennessee and Arkansas, and further south, it grows poorly, and is soon killed out by grasses better suited to the soil and climate.

It is highly nutritious and adapted to grazing and ornament; but it is hard to cut, and difficult to cure as hay. It is said to pass uninjured in its seeds through the stomachs of cattle; and thus it has gone, it is said, west with civilization. In Virginia, Kentucky, and parts of Missouri, upon limestone, clay, and loam, it is self-propagating, and masters all other plants and grasses. I have in Kentucky frequently wintered stock upon it without other feed. But where it is designed for winter use, it should be allowed to grow undisturbed from midsummer until cold weather. As its culture is not so well known further north, I will give some hints about it.

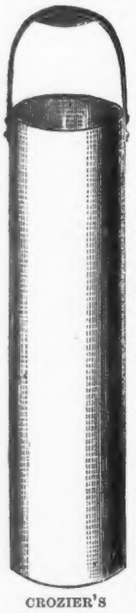
Seed.—The seeds are very small, and securely covered with husks; but when rubbed hard between the palms of the hands, appear of a long oval shape, wax color, and hard. The seeds are easily injured by heating in bulk; and it is surest to buy those in the cut-up seed-stalks, which are thus better aired. Good seed, when thrown upon live coals, makes a sharp, crackling noise.

Sowing.—In woodlands, after the fallen leaves are burned or removed, the seed may be sown broadcast upon the snow any time after February, or sooner; the freezing of the ground and its thawing in early spring will sufficiently imbed the seed. The brush-wood and weeds should be kept down until the seed is ripe, in the second year, when the lands may be safely grazed.

Lawns.—In making lawns, the ground, if clayey, should be well underdrained, deeply plowed, or spaded, all large stones, stumps, etc., removed, and the surface made level and clear of clods by the harrow or other means. The Blue-grass seed, mixed with timothy, clover, or other grasses, in small quantities to shade the tender shoots, should then be sowed broadcast with the hand; and then the ground should be smoothed with a heavy roller. In the Middle States the fall is the best time to sow, on account of the hot spring-time; but in New York, and further north, perhaps, early spring is better. I say nothing about the quantity of seed, as it is marketed in a clean state, in the chaff, beaten from dew-rotted stalks, and cut-up stalks and all, in a feed-box, and also stripped by machinery or the hand from the standing grass. Other things equal, the more seed the better; but as this grass spreads readily from the roots, it will soon fill the whole surface of the ground.

Culture.—In sandy soils, there should be a heavy top-dressing of lime, clay, and vegetable manure, before plowing; stable and other hot manures should not be put on until the grass is well sodded; and then only in the late fall, winter, or early spring. The grasses sowed with the Blue, should be cut off with the scythe; but the lawn should not be grazed until after the Blue-grass seed are ripe, the second year, when it may be cut or grazed. After this, the sward may be kept down smoothly with a scythe or mowing machine; but I would recommend the suspension of that operation during a drouth and the late fall, so that the blades may better protect the roots during the summer heat, and give the sod an earlier start in the spring. White clover being a low plant and of similar habits with this grass, may be sown with it—but to me no green-sward is so beautiful as the unmixed Blue-grass. C. M. C.

APPARATUS FOR COOLING CREAM.—Much of the ease of butter-making depends upon having the cream at the proper temperature. If the cream is shown by the thermometer to be warmer than 62° or 63°, it should be cooled to that point. The cooling is usually accomplished by setting the vessel containing the cream in cold spring-water or ice-water. A very rapid and effective method of cooling a large quantity of cream, is to use a vessel like that shown in the engraving. It is a tin can, about 3½ inches in diameter and 20 inches long. This, being filled with broken ice, is moved about in the cream until the temperature is sufficiently reduced. As the cooling medium is moved through the cream, not only does the cooling take place rapidly, but the agitation causes the cream to be of a uniform temperature throughout the whole. It is not a slight advantage that this cooler is merely a plain cylinder, and as its exterior surface only requires cleaning, it is likely to be kept sweet. In cold weather, when it is necessary to warm the cream, the same implement is used, but in this case, hot water takes the place of ice.



CROZIER'S MILK-COOLER.

A BOTTLE FOR DOSING ANIMALS.—The engraving represents a tin bottle with a curved neck, made for the purpose of administering a dose of medicine to a horse. A glass bottle is commonly employed for this purpose; but one made of tin is altogether safer, being not liable to be broken, and more convenient, and, being kept for this purpose alone, it is always at hand, when required for use.

DOSING BOTTLE.

A Hay-rack for a Farm-wagon.

In a recent visit to Beacon Stock-Farm, at Northport, L. I., to inspect Mr. Crozier's pigs and piggeries, we saw several farm appliances which may be new to many of our readers. We present illustrations of a hay-rack, a tin bottle for administering medicine to animals, and a simple contrivance for regulating the temperature of cream. The hay-rack is intended to be used with a common farm-wagon. Figure 1

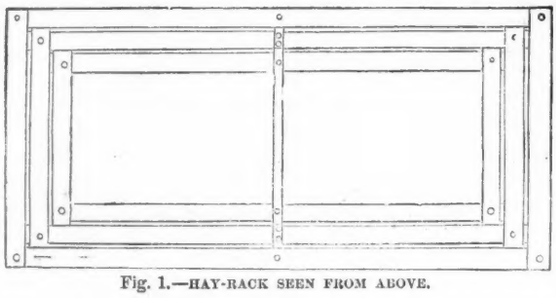


Fig. 1.—HAY-RACK SEEN FROM ABOVE.

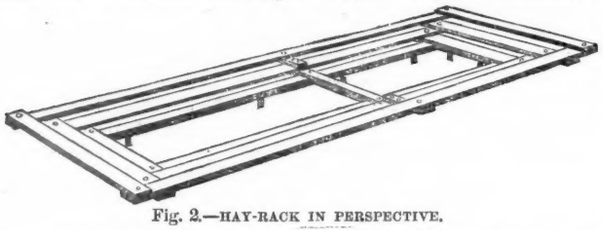


Fig. 2.—HAY-RACK IN PERSPECTIVE.

is a perspective view, and figure 2 shows the same thing looked upon from above. Four joists, to correspond with the length and width of the wagon-box, are taken as the foundation. The shorter or end-pieces are laid upon the longer or side-pieces, and firmly pinned to them. The end-pieces project far enough beyond the side-pieces to receive two boards, which run parallel with the side-pieces; these boards are long enough to allow two end-boards to be secured to them, and these end boards in turn support two more long boards, and the whole is finished by the addition of two boards for end-pieces. It will be seen by the figures that there are three tiers, one of joist and two of boards, laid up cob-house fashion, each tier being larger than the one beneath it by the width of a board. A piece across the joists in the middle, and two short pieces at the center of the planks, give the requisite stiffness. The rack is held in its place upon the wagon-box by means of wooden pins, driven into the joists at such distances as the size of the box requires.

The Art of Making Good Butter.

BY MRS. GEO. WOOD, OF WILLIAMSPORT, O.

Milk.—First, you must have good, healthy young cows. They require good food and uniform feeding. They should be salted twice a week, and have fresh running water daily. Second, the cow must be milked as thoroughly and as rapidly as strength will permit; then, after standing 5 to 10 minutes, she must be stripped, so that she will be left dry; for a pint of strippings will make far more butter than a gallon of the first drawn milk. The milk should be strained immediately. My experience is, that a large two-gallon stone crock is best for setting, and should remain standing for 48 hours in moderate temperature (about 60°) before skimming.

Cream.—Churn every other morning in cool weather, but, when warm, churning should be done every morning, and the cream kept in as cool a place as possible; also, put a large lump of ice in the cream over night, which will have no effect on the butter; but if the ice were put in the butter, it would spoil it. The milk should be skimmed every 24 or 36 hours. I place the crock of milk in water from 8 to 10 inches deep, when the cream rises in the above-stated time (24 to 36 hours), and the milk seldom gets sour.

Washing and Cleansing the Utensils.—The only method I know of, that will thoroughly cleanse milking-vessels, is, to add to 10 gallons of water a half gallon of clean, strong wood-ashes, and let it come to a boil; wash the stone crocks in warm water, then run them around in the boiling lye, and wash in warm water. This process will do for the buckets, ladles, the churn, etc. No other mode will purify the rancidness that will accumulate in a dairy. After washing and rinsing the crocks, expose them to the air and sun; they will be as sweet as when first brought from the store. Once a month will be sufficient for this cleansing. All good dairy-women know that the utensils should be washed in boiling water after using.

Churning.—My plan is to never let the cream stand over 48 hours after it is skimmed, and I find no difficulty in churning. In midwinter, proceed as follows: Stand the cream near the fire, where it will become quite warm; then let it cool rapidly; add more cream the next skimming, and so on until the fourth skimming. Let it stand all night, and in the morning scald out the churn before using. In case the cream is too cold, add a little boiling water. When the churning is finished, the butter should be drained and well worked; and on no account should the butter be washed, for this reason: if you wash butter, it will get strong in half the time it would by extracting the milk without washing; it must be worked out, or the butter will soon become rancid.

Salting. — To 12 pounds of butter use a pound and a half of salt, well worked in, and put in a cool place until the next morning; then work again, working out the brine which will accumulate, which is almost equivalent to the amount of salt put in. If the butter is made for packing purposes, work it the third morning, and make into rolls of convenient size.

Keeping.—The best mode I ever discovered is to make each roll separate, wrapping a clean thick cloth around it tightly, then place in a tub as tight and close together as you can; cover with a brine, which is made as follows: To 5 gallons of spring-water, add 5 lbs. of coarse salt, 2 oz. of saltpetre, 8 to 10 oz. of the best loaf-sugar, all well dissolved. This should cover 100 lbs. of butter, and preserve the same for six months or more.

Coloring.—I have never found it necessary to use anything to color butter, but by observing the preceding rules, in summer and winter, have always had good golden butter. This is the experience of the past 18 years of farm life.

Butter for market should be made into rolls of convenient size—say 2½ lbs. in a roll, and confined in a thin muslin cloth, rinsed in salt-water, then placed in a tub, around which should be a woolen matting.

When the above process is used, you can send butter one hundred miles in midsummer, and it will keep better than if packed in ice. I would say, for the benefit of the farmers, that they cannot take 12 or 15 head of cattle (and give them all the feed they can possibly eat), and make half the money off the feed that they could with that number of cows. Then, butter-making is the most healthy exercise a person can take while the warm air that arises from a bucket of fresh milk is worth more than all the beverages ever produced. It would be well for young ladies to profit by this.

A Scraper, or Ground Leveler.

BY SAMUEL T. VARIAN, PLAINFIELD, N. J.

A beautiful lawn or meadow is one of the most attractive features of the country.

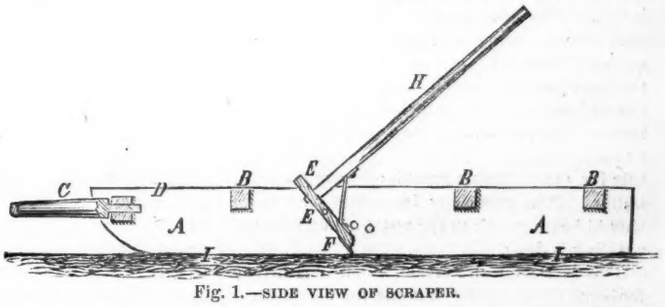


Fig. 1.—SIDE VIEW OF SCRAPER.

A, *A*, Runners, two-inch plank, twelve feet long, twelve inches wide; *B*, *B*, Braces between runners; *C*, Pole for horses; *E*, Scraper, two-inch plank, fifteen inches wide, with tenon on each end to enter augur-holes, in runners forming axis, upon which the scraper works; *F*, Iron or steel plate let in flush with scraper; *G*, Iron plates or battens to prevent splitting; *H*, Handles to operate scraper; *I*, Iron shoes; *K*, Platforms on which driver and operator stand.

The expensiveness of a nicely graded surface, produced by ordinary means, prevents many persons from doing what would afford to themselves and others a vast amount of pleasure.

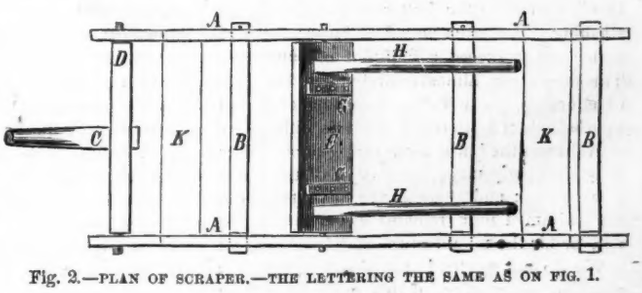


Fig. 2.—PLAN OF SCRAPER.—THE LETTERING THE SAME AS ON FIG. 1.

Farmers would be amply repaid for a little extra work in smoothing off their land, when in

a friable condition, by the increased facility of gathering crops from an even surface.

The lack of knowledge as to how this object can be easily and cheaply accomplished, prompts me to offer a simple and very effective device for this purpose. I have used it several years, and with such satisfactory results, that I deem it an almost indispensable implement.

For lawns, meadows, ball-grounds, or race-courses, when carefully managed, it has no superior: the only requirements being mellow ground, free from stones or other obstructions. A sod, well turned under, does not interfere with its operation. The advantage of the adjustment of the scraper between two runners, or straight edges must be obvious. The removal of scraper leaves a good sled for the winter use. For rural improvements it is no less valuable than is the jack-plane to the carpenter.

Butter from Devonshire Cream.

There is a custom of scalding cream prevailing in Devonshire, England, which is worthy of a wider extension. The product, "clouted" cream, also called "Devonshire" cream, is exceedingly rich, thick, and palatable, and is accounted a luxury wherever obtainable. The process is the following: the milk is allowed to stand in the dairy, which must be too cool to allow it to sour, from twelve to twenty-four hours—that is, the milk of one day is attended to on the following morning. It is set in tin pans about seven inches deep; these have a good handle at each side as a help to careful moving. Most of the cream will have risen at the time of the preparation, which consists in scalding simply, care being taken not to allow the milk to reach the boiling point. The best way would be to set the pan in gently boiling water. The heat must be kept up until the milk becomes very hot, and the cream thoroughly "crinkled" or clotted; the pan should then be removed carefully to a cool place, and allowed to stand undisturbed for twenty-four hours. The cream may then be removed, and, either fresh or salted, it is an excellent substitute for, many think a great improvement upon, butter. It is especially important that there should be no smoke in the apartment where the scalding is done.

This is Devonshire cream, a delicious article for home consumption, but one for which there exists no market demand in this country. The chief value of the process, for American farmers, lies in the fact that it is an excellent preparatory step in the making of butter. It secures all the cream, gives it such a consistency, that skimming is much easier and much cleaner—that is, there is less milk taken, which enables it to give up its butter with remarkable ease. Indeed, it is only necessary to rub the cream with the hand for a few minutes in a smooth wooden bowl to separate the butter entirely, ready for washing. For each pound of butter there remains not to exceed a half-pint of buttermilk. This does away, almost entirely, with the labor of churning, and with the handling of an immense bulk of buttermilk, and its difficult removal from the butter by washing or otherwise. When properly made, the quality of the butter is excellent; and there is the advantage, that the skimmed milk remains sweet and fit for use, or for the manufacture of "lean" cheese.

We do not pretend that the foregoing is a complete description of this mode of making butter; and we warn all readers not to blame us if they fail to get good results from their first experiments. We have merely sketched out a process that is in successful use in many parts of England and Scotland, and that promises advantages for us, and we must leave the details of manipulation to be learned by experience. It is an exceedingly simple system, but it needs practice to teach the exact point to which the milk should be scalded, and to settle the question of temperature, frequency of churning, etc.

Since the above was written, we have had a talk with an English lady who has had experience in the matter. She says the two great things to be guarded against are (1), agitation of the milk in handling the pans; and (2), too rapid heating, or heating for too long a time. The pan should be set over a slow fire, or over, or in, boiling water, and watched until the cream begins to contract so as to leave the sides of the pan; then the center of the cream should be punctured by a sharpened stick (wood is better than metal for this purpose); if the hole made becomes larger, showing a contraction of the cream in the center as well as at the sides, then it is time to remove the pan from the fire. She also says the knack of the thing is easily learned by a careful person, but that it should not be left to ordinary hired help.

Mineral Fertilizers—Why they are Needed—Analysis of Wheat.

BY W. S. WARD.

So much has been written in defense of a regular and judicious system of fertilizing, that it is not the intention of the writer to attempt any further support of claims, which are doubtless recognized as sound and just by all intelligent farmers; and yet careful personal observations have but strengthened the conviction, that the recognition of these claims would be more general and hearty did there exist a better understanding between the agricultural chemist and the practical farmer. It is with a view to promote this mutual respect and confidence that we ask you to join us in our laboratory—the chemist's workshop—that we may pursue together a few of the investigations on the results of which the chemist founds his theory of mineral fertilizers, while we on our part stand ready to accept any suggestions which your experience as practical farmers may render worthy of consideration.

We have, for instance, propounded to us the question, "What mineral substances are most needed to increase the yield of wheat on any given soil?" Were a farmer to be shown a well-fattened and finely-developed steer, his first inquiry might naturally be respecting the kind of food upon which the animal had been fed. Let us, then, take in hand a few full and well-rounded wheat-grains.

And since he upon whose lands they were grown can give little information beyond that which relates to the season in which the seed was planted, the general character of the soil, etc., we must therefore propound any questions respecting the quality and quantity of the food they consume to the grains themselves, and how clear and satisfactory will be the reply, let the chemist's crucible and balance determine.

Since it is not our intention to discuss in full the nature or authority for the present system of chemical analysis, our readers must take for granted that certain results are sure to follow when we comply with all the conditions named.

As the head of wheat is formed at the top of a long, slender stalk, each kernel inclosed in a leafy shield, which afterward becomes the chaff, and as previous investigations have taught us that the leaves of plants, like the lungs of animals, have the power of drawing from the air

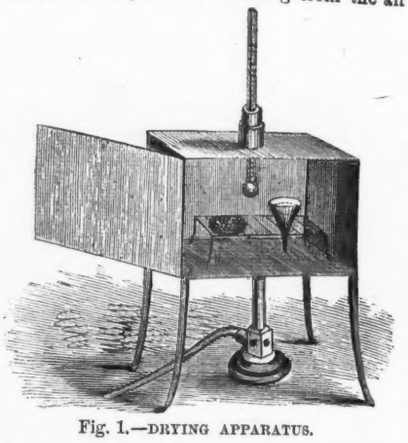


Fig. 1.—DRYING APPARATUS.

such food as their growth requires, when that food exists in a gaseous state, it is therefore proper that we first determine what proportion of the grain is capable of assuming this gaseous form, which is done by burning it in a low, open platinum dish, called a capsule. Having, therefore, weighed our dish carefully on a balance so delicate that it will easily weigh the finest hair, we will fill it with the well-cleaned grains and weigh again; the difference will represent the weight of the grains to be analyzed.

In order to remove the moisture from any animal or vegetable substance, it is only needful to heat it for some time at a temperature of 212° Fahrenheit, since at that point water, as we know, becomes steam, and passes off. This heating is done in a sheet-iron box, and lest we burn the grains before the time, a thermometer is inserted into the top; the lamp used is that known as a Bunsen burner, in which common air is combined with gas in such a way as to

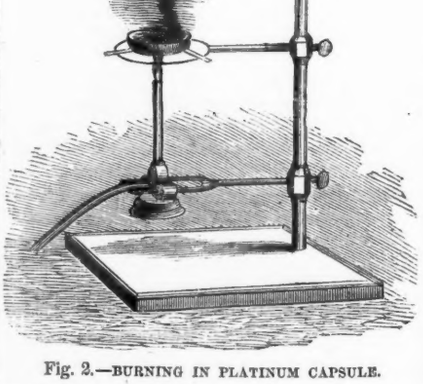


Fig. 2.—BURNING IN PLATINUM CAPSULE.

produce intense heat. The form of this "drying apparatus" is shown by fig. 1.

After heating for about six hours, we remove the capsule and weigh again; the loss in weight will not vary far from 12 per cent of the whole. Let us now place the capsule on a platinum triangle, supported upon a movable ring, as shown in fig. 2, and heat by means of the same lamp, applying the heat slowly at first.

To enumerate all the changes which take place when animal or vegetable matter is burned, would introduce us into the department

of organic chemistry, in which the methods of analysis, though certain and beautiful, are too complex to be clearly demonstrated here; it is enough to say, that during the first stages of the combustion, and while the heat is comparatively low, the nitrogen is driven off; nitric acid and ammonia being formed, both of which remain suspended in the moisture of the atmosphere, from whence it is returned to growing plants through the roots or leafy lungs. Before increasing the heat, let us examine our grains. They have become black, and resemble small lumps of charcoal, which is one of the forms of pure carbon, and as carbon is the principal constituent of all animal or vegetable substances so far examined, we have a right to believe that it is also present in the wheat-grains; but there must be no guessing in so important an investigation; hence we will settle the question by actual experiment. It has been previously determined that when pure charcoal is heated in the open air, it will slowly disappear; the carbon uniting with the oxygen of the air, forming carbonic acid gas, which plays the same part in the vegetable economy that oxygen does in the animal. Now there are certain tests by which the chemist can determine whether a gas be carbonic acid or not; we apply one of these tests to some of the gas collected from above the burning grains, and it answers the reaction, as it is termed; hence we know that the substance which remained after the first burning was chiefly carbon. We say *chiefly*, because we will discover, after burning all the carbon off, that there remains behind a grayish white powder, which is not reduced in quantity or changed in color by continued heating. After removing the lamp and allowing the capsule to cool, we weigh it again; the amount not consumed will be found to be about 3 per cent of the whole, and we call it inorganic or mineral matter.

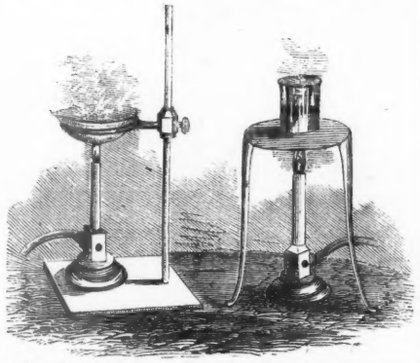


Fig. 3.—BEAKER. Fig. 4.—EVAPORATING DISH.

Since the question which engages our attention relates particularly to those *mineral* substances most needed in a general fertilizer, we will proceed at once to analyze this grayish powder, which contains all the involatile constituents of the wheat-grain. It is evident that in order to conduct an analysis of this character, it is desirable that the substance under examination be reduced to a fluid state—that is, that it be dissolved in some suitable solvent. Now, as it is probable that this powder contains some substances which it may be difficult to dissolve directly in pure water, we will remove it from the capsule to a glass vessel, called a beaker, and having poured over it some strong muriatic acid, place it upon a thin iron plate containing sand, over the flame, and supported upon a stand, as shown in fig. 3.

When the last traces have disappeared, which may require several hours of continued heating, we will transfer the acid liquid, which contains the powder in solution, to a saucer-shaped porcelain evaporating dish (fig. 4). The reason for this second operation will be apparent when we state, that among the most frequently present of all mineral substances is silica, which appears in its pure state in the quartz crystal, forming also the chief constituent of sand, and therefore existing to a greater or less extent in all soils. It is this which gives to wheat-straw its gritty feeling, while the surface of those peculiar reeds, once used for scouring, is, as it were, paved with it. Since of so general occurrence in the soil, and as it is also found in the animal system, it is natural that we apply a test to answer if any has found its way into the wheat-grain, and, if so, we will remove and weigh it. In order to determine this, it is necessary to evaporate our solution to dryness in the manner indicated in figure 4. When all the free acid has been driven off, the solid substances, including the silica, will remain in the dish as a white powder; we now add more of the acid and water, when, if there be silica present, it will not dissolve a second time, but remain so mixed with the liquid as to require another process for its removal. This is effected by pouring the liquor upon a filter of unsized paper, carefully fitted into a glass funnel. To effect this transfer

Fig. 5.—FILTERS AND FILTERING.

safely, a glass rod is used in the manner shown in fig. 5, which also shows the form of the paper filter, and manner of folding.

When the liquor has all passed through the filter into the beaker beneath, pure water is added by means of a chemist's wash-bottle, in order to wash out from the paper any of the remaining fluid, and leave the silica on the filter pure and clean. The funnel is then carefully covered, and placed in the drying-box (fig. 1), and when the filter is dry, the silica is carefully removed by means of a feather to an ordinary watch crystal, and weighed, when it will be found to represent about 3 per cent of the whole weight of the ash. We now return to the liquor contained in the beaker, and add to it enough liquid ammonia to neutralize the acid, and then a small amount of oxalic acid in the form of oxalate of ammonia. After boiling and allowing to stand over night, a white powder will be discovered at the bottom, which is oxalate of lime. We remove this by means of the filter, as we did the silica; its weight will indicate about 3 per cent of lime. By the same general method we might remove the phosphoric acid, potash, magnesia, etc., and our final report would be very similar to the following "analysis of the ash from the white wheat:"

Potash.....	29.97	Sulphuric acid.	0.33
Soda.....	3.90	Silica.....	3.35
Magnesia.....	12.20	Oxide of iron...	0.79
Lime.....	3.44		
Phosph. acid..	46.02	Total.....	100.00

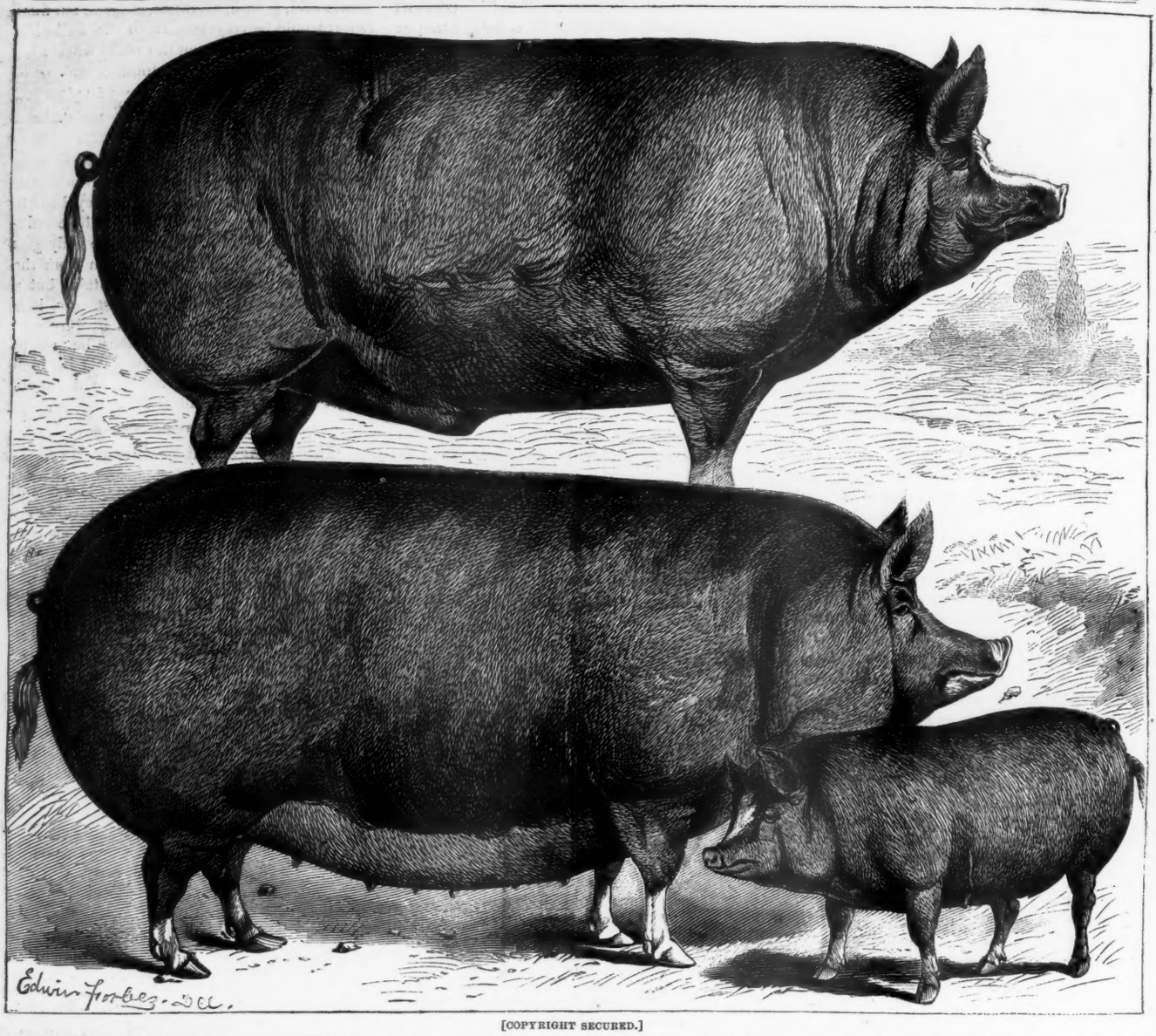
Having once decided the question as to what mineral substances are represented in the wheat-grain, and knowing the relation they bear to those which are found in the body, the conclusion naturally follows that what the body gets from the grain, the grain must obtain from the soil; and as frequently this soil contains but a limited amount of the desired substances, it is evident that in order to secure a healthy and vigorous growth, due attention must be paid to this demand. It is with these facts in mind that the intelligent farmer resorts to the application of "mineral fertilizers."

The Management of Clover Hay.

Clover should be mowed as soon as it is well in blossom. There is no necessity to wait for a brown head; there will be plenty to be seen before the crop is well down. Cut when the dew is off, and allow to dry until afternoon, when it should be shaken up and turned before the dew falls. If a tedder is employed, its constant use will fit the clover to be put in cocks the same day. If turned by hand, it may lie until the noon of next day, when it may be put in cocks, made as high and narrow as possible; they will shed rain better in this shape, and, if caps are used, a yard square will be sufficiently large to cover them. Caps are to be strongly recommended, and the above size is sufficient, as the top only needs protection. Put up, and, thus protected, the hay may stay in the field until it is all made, when it may be hauled together. If any cock should be damp inside, spread for a few minutes; it will dry rapidly. Clover cured in the cock is much more valuable than that dried in the sun, and wastes less in handling. Put away the *first cut hay* by itself, in a place convenient for use in the spring. Cows coming in early in the spring will thrive on this hay; the milk will be largely increased in quantity, and be richer in quality, while the butter will come easily, be free from white curdy specks, and in color will not be far behind that from June grass.

Sowing and Curing Corn Fodder.

Corn, planted after the first week in June, is likely to be caught by an early frost and injured. Rather than plant later than this period, it would be much better to sow it for fodder. One acre sown with three bushels of corn, in drills three feet apart, and kept well cultivated, will yield as much feed on land of equal quality as three acres of clover or grass. We have heard of nine tons of cured fodder being taken from a single acre. Of course this must have been on exceedingly rich land; but why could not any farmer make one or two acres rich enough to do this for himself? We have cut at the rate of four tons per acre, and the crop did not look well enough to satisfy us. If the seed is dropped at the rate of twelve grains to the foot, and twelve cured stalks weigh a pound, which they should do if five or six feet high, and as thick as one's little finger, the crop would yield nearly seven tons per acre. A little care, and plenty of manure, would secure this result. As soon as the blossom appears,



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BERKSHIRE PIGS, BELONGING TO WM. CROZIER, ESQ., BEACON STOCK FARM, NORTHPORT, L. I.—*Drawn and Engraved for the American Agriculturist.*

the stalks should be cut up or cradled, and permitted to lie for a couple of days to wilt; they may then be gathered into small bundles, tied up, and shocked, well spread, and opened at the buts for the admission of the air. This is an important point. Corn-stalks, thus grown, will contain much sugar, and need to be perfectly well cured, or fermentation will set in and sourness and mold occur. When sufficiently cured, the stalks may be stacked or put away in the barn. They will need a ventilator in the shape of three rails, with short pieces of boards a foot long nailed to them, to keep them apart and make a sort of pipe. This must be set up in the center of the stack, and the stalks placed round it, buts outward. If they should be put away in a mow, two such ventilators must be provided. The top must be kept open, or only lightly covered, as much damp air will escape. Such fodder will be found equal to ordinary hay; in fact, better than most hay. Cut up with a stalk-cutter, wetted, and sprinkled with a handful of meal—or corn and oats ground together—for each head of cows and calves, and a bushel basket of the mixture given at each feed, it will carry such stock through the winter in excellent condition. Milking cows will improve by changing to such feed. Working horses may be kept in good condition on three quarts of meal and a bushel of fodder at a feed, equally well as on hay and grain. A still greater economy might be secured by steaming; but with a small stock, and on average farms, this process is impracticable.

Berkshire Pigs.

The Berkshire and the Essex are both black breeds, each of which has its advocates and admirers, who claim that the Berkshire or the Essex, as the case may be, is superior to any other breed. The chief use of these thoroughbred animals is to cross with and improve our common stock; and for this purpose, if the boars be thorough-bred, it makes but little practical difference which breed is chosen. In England, where the breeds originated, the Berkshire is preferred for furnishing hams and bacon, while the Essex is considered the best for fresh pork. Crosses of either breed, with good common sows, produce pigs much "refined" in form, and able to fatten rapidly, while at slaughtering they yield a minimum amount of offal. We present an engraving of two of Mr. Crozier's imported Berkshires, with a small pig born in this country from imported parents. The Berkshires are covered with long, silky hair, and in the best examples, have four white feet, a white spot upon the forehead, and white on the end of the tail: all the rest being black, save a very small amount of white behind each shoulder. The Berkshires—and the same may be said of other pure breeds—have only within a comparatively few years been appreciated in this country. They were introduced here some thirty or forty years ago, at which time there was a great excitement over the breed, and specimens sold at enormous prices. Our farmers had not learned, that these animals had reached their then state of perfection, through the greatest care in breeding and keeping; and when these high-bred animals were subjected to the treatment given ordinary swine, they disappointed their owners, and the breed fell into disrepute. Doubtless, since the first introduction of Berkshires, the English breeders have much improved the breed; and the specimens now in the hands of our own stock fanciers, are much superior to those about which so much was said thirty years ago.

Field Culture of Lima Beans.

The cultivation of the Lima, the most delicious of all beans, is principally confined to the home and market garden. The price always ranges high, from eight to fifteen dollars a bushel wholesale, according to the character of the season. It is a little uncertain of ripening its seed, north of 42°, though it will mature fine pods for succotash much further north. The green beans, dried at any time before the frost strikes them, are even better for table use than those fully matured. The demand for Limas from the market-gardener is so brisk, that he usually sells his whole crop green in the pod, not always reserving enough for his own seed. The good housekeeper welcomes the first show of Limas upon her poles, and the pods are plucked as fast as they are old enough for succotash, and she is greatly astonished that there is not a brown pod for seed when the frost closes the season. Between the improvidence of cultivators in the region where the crop will fully ripen, and the inability of others in the narrow belt where nothing but green Limas can be grown, there is always a lively demand for good sound seed in the spring. In cool seasons the seed is scarce, and rules very high. In hot, dry seasons, like the last, more of it is matured, and the price is lower, but still about three times that of the best kidney beans. This peculiarity of the crop that we have noticed makes it a desirable one for farmers remote from market towns. If they are within the belt where the seed will ripen from one-half to the whole crop, they are perfectly safe in devoting a large breadth to Limas. The mature part of the beans will bring a large price for seed; and the immature, if properly dried, will bring nearly as much for table use in winter. The family grocers in our large cities always find it difficult to meet the demand for this vegetable. We devoted a quarter of an acre to this crop last season by way of experiment. The land selected was a gravelly loam, in nothing more than fair condition; probably capable of growing thirty five bushels of shelled corn to the acre. It was manured with about two cords of barn-yard manure and compost, planted the last of May, and treated very much as the corn crop through the season. The beans grew well, and gave four bushels and six quarts of seed, besides some sent green to market. The market wholesale price for the article this spring was eight dollars a bushel, or $134.00 per acre for the crop. This is about three times what the corn crop would have been worth upon the same land with the same manure. The cost of poling the beans, and of harvesting them, was judged to be an expense of ten dollars an acre above that of a corn crop. CONNECTICUT.

VARIEGATED CROWN IMPERIAL.

Variegated Crown Imperials.

The Crown Imperial is the monarch of spring bulbs. It lifts its stately head far above the Tulips, Narcissuses, and other humbler plants, and wears its floral crown with a royal air. Kings are but mortals, and Crown Imperials are not all perfect. The large bulb which we plant in autumn is about as repulsive in odor as a Skunk-cabbage with the cabbage omitted. The bulbs of the Crown Imperial should not be left too long out of the ground, as they dry up and become weakened, and probably this strong odor is a hint that they should be promptly earthed. In spring this bulb throws up a robust stem, clothed part of the way with luxuriant leaves; then a bare space of stem, above this a large whorl or crown of pendent tulip-like red or yellow flowers; and, above all, a tuft of smaller leaves. These flowers do not show all their beauty until we examine them closely. Turn one of them up, and there, at the base, are six pearls—at least they look like pearls; but they are only drops of honey-like liquid, in a round cavity at the base of each petal. We have been much pleased this spring with the variegated Crown Imperials—the Golden and Silver-striped, as they are called. The variegation is well marked, and appears very lively in contrast with the dark-green foliage of the ordinary form. The plants with variegated foliage do not flower so freely as the others, sometimes failing to bloom altogether, and often producing flowers much reduced in size. Yet their foliage is so bright that they are worth growing, even if they do not flower at all. The engraving represents the markings as well as can be done upon such a reduced scale.

THE RHODORA.

The Rhodora.

In the latter part of April, or early in May, the wet meadows of many parts of New England show fine patches of color, which are due to the flowers of a low shrub—the *Rhodora Canadensis*. The plant grows from one to three feet high, has very erect branches, each of which produces a cluster of showy rose-purple flowers. The leaves at flowering time are just appearing from their scaly buds; when fully developed they are narrow, oblong, pale-green above and whitish and downy upon the underside. The Rhodora usually occurs in clumps, with the stems growing at about the same hight, and thus in the mass makes a fine show. Viewed separately, the flowers remind one of the Azalea, to which the plant is nearly related. Though growing naturally in very swampy places, the Rhodora does well in the garden. The specimen from which the engraving is taken has been for some years in the poorest

and sandiest part of our grounds, yet it flourishes finely. It is usually recommended to grow this in "Rhododendron soil," which means soil with a considerable amount of peat mixed with it. It would probably grow better in such a soil, but we hope that the lack of it, will not deter any one from trying the Rhodora in any good garden soil. The name Rhodora is from the Greek word for *rose*, on account of the color of the flowers. Plants may be obtained from the native localities, and they are kept by some of the nurserymen.

Training and Pruning the Tomato.

The French method of pruning the tomato to a single stem, and keeping this tied to a stake five or six feet long, though not to be commended for general culture, has its particular uses. In localities where the season is too short to allow the fruit to ripen without extra care, this manner of training may be profitably adopted. In gardens in more favored climates, a few plants grown in this way will give fruit earlier than the general crop, and the specimens, as a general thing, will be finer. The

PRUNING THE TOMATO VINE.

objections to the method are, that it takes too much time, and the plant does not yield all the fruit it would if not so restricted; while with large varieties the clusters are apt to break away by their own weight, unless great care is taken to support them. To those who have leisure, the training will afford abundant employment, and the sight of a well-managed plant, loaded with clusters from the bottom to the top, is worth working for. As the tomato differs in its manner of growth from most plants, we give a diagram showing the manner of pruning. The majority of plants produce flowers either upon the end of the stem, or from the axils of the leaves. In the tomato, the flower clusters appear, not in the axils of the leaves, but considerably above them—about midway between two leaves. In pruning for this style of training, as soon as the first cluster of flowers *a*, or rather of flower-buds, shows itself, the vine is cut off above the next leaf, as shown by the line *b* in the diagram. The bud in the axil of this leaf below will soon push out a shoot *c*, which is cut off in the same manner, as soon as it is sufficiently developed to show the cluster, and in this way the cutting is continued until the desired hight is reached. Shoots will start from the axil of every leaf, but these must be kept cut off, which will be found no little task, and the stem must be kept carefully tied to the stake with ties that will not cut it. The tomato is such a rampant grower that it will need daily care, if this method of training is strictly followed; and unless it is carried out, it had better not be undertaken.

Don't Sow too Early.

BY PETER HENDERSON.

A decision was rendered recently in one of the Philadelphia courts against the claim for damages made by Jacob Kessler, a market-gardener, who brought suit against Mr. Dreer, the well-known seedsman of Philadelphia, for having sold him Early York cabbage seed that "run to seed." The seedsmen of the whole country are indebted to Mr. Dreer, and no doubt will tender him their hearty thanks, for the grit he showed in standing a suit rather than to compromise, as the chances were more than even against him, the sympathies of the jury being most likely to be with the complainant in such a case. The ventilation of such a matter is exceedingly instructive to those engaged in gardening operations, as was shown by the facts elicited on the trial, the gist of which was, that Mr. Kessler had sown the cabbage seed on the 5th of September instead of the 15th, and that error, combined with an unusually mild and growing fall, practically lengthened the season, so that the cabbage plants became "annuals"—running to seed within the year of sowing—rather than *forming heads* and acting as "biennials," as was expected of them. Now, just here an excellent lesson comes in with another vegetable. Most of our so-called scientific gardeners are English, Scotch, Irish, or Germans; they come here, most of them, with a thorough contempt for our rougher style of doing things (a practical style born of our necessities in the higher cost of labor); and it is next to impossible to convince one in a dozen of them, that there is anything in horticultural matters here, that he needs to be informed of. Accordingly, if he wishes to raise celery, he starts his seed in a hot-bed in February, just as he would have done in England, and is astonished to find in July that, instead of forming a thick and solid stalk, as it would have done there, it spindles and runs to seed. If his knowledge of the art had been based on common sense, instead of the blind routine practice attained in a colder climate, he would have known our season—from April 1st to July 1st—would sum up nearly the same mean of temperature here as it would there, from February 1st to July 1st; and hence it was not only unnecessary here, but dangerous to the welfare of the crop, to sow such biennial plants as celery in any other place but in the open ground, and that not before April. It was just such an error that the market-gardener made who sued Mr. Dreer. He had been following likely in the English or German method, and paid the penalty not only of losing his crop, but losing his lawsuit, by not adapting his practice to our conditions of temperature. As the matter of sowing the seeds of cabbage, cauliflower, and lettuce to make plants to winter over in cold-frames, is one in which there is a widespread interest, I may here state that the time of sowing in fall, in a country having such an area and difference of latitude as ours, is somewhat difficult to gauge; but taking the latitude of New York as a basis, the safest time we have found to sow is from the 10th to the 15th of September. Of late years we have inclined rather more to the latter date, and have even sown as late as the 30th September, with excellent success, in warm, well-sheltered positions, in a rich, well-prepared soil. In connection with this subject, I would refer to the evils arising from the too common practice of many of our agricultural and horticultural journals, of selecting from English papers articles that often seriously mislead. For example, a Boston magazine not long ago copied a long article from the English *Journal of Horticulture*, telling us, in a very patronizing way, how to propagate the golden tricolor-leaved geraniums. The writer laid great stress on having a sharp knife, and cutting the slip in a particular manner, then to insert it in silver sand, and a lot of other nonsense, that any boy of six months' practice here would have known was absurd; but, above all, the operation was to be performed in *July!* He might have got the sharpest knife that was ever made, and the purest silver sand that ever lay on the seashore, but he would have utterly failed in our climate, if he attempted the work in July. This is only one of scores of such absurd selections as we see yearly in some of our horticultural journals. If the conductors of such have not original matter to fill up with, better far that they leave their pages blank than to show their utter ignorance of what is suitable to our climate.

Gardening in Iowa.

BY A WESTERN MAN.

I was quite interested in an article on gardening by the author of "Walks and Talks," but we farmers in the West will but few of us take the trouble to prepare the ground as there directed. I will give you my plan, and, as it is not patented, any one may follow it who wishes: first, have two gardens, or a fence dividing the garden into two compartments, and have them well fenced. Now, to start with I have a few rules which, if they are not mathematical axioms, yet are important—1st, whatever is worth doing, is worth doing well; 2d, in order to have a good garden, the ground must be prepared the year beforehand; 3d, that in Western gardening, as in Western farming (or for that matter wherever land is cheap), the object is to raise as much as possible from a given amount of *work* instead of a given quantity of *land*. Now, for the preparation; we premise that every farmer keeps stock, and, as labor is scarce and high, we wish to bring it to our assistance, and have it help us to make our garden. We used sheep, as they are the best. As soon in the spring as the ground is dry, plow the land, and harrow down smooth, then yard the sheep; and if the yard can be adjoining the pasture, induce the sheep to take their "nooning" in the garden that is to be. No danger of its getting too rich, even on our black prairie soil. After it has lain about a month, plow and ridge up the ground, as is commonly done for sweet-potatoes, plowing as deep as possible with two horses; plow again, and make the ridges where the furrows were. It is better to plow thus as often as once a month, but it is quite important that it should be plowed in ridges as high as possible, just before it freezes up. Keep the sheep on even through the winter, provided

they are not fed on the ground with hay or fodder, that will make long unrotted manure. Do not allow stock to tramp the ground after it thaws in the spring. You now have the ground in a condition to make a splendid garden. The other garden or compartment is to be prepared in a like manner for the next year's use, thus using one of the gardens each alternate year. Of course perennials of all kinds will have to be allotted a separate place. I will not try to tell you of the crops that we raised on our sheep-yard, for we neither measured nor weighed but one of the crops, but ourselves and all that saw, were astonished. The one we did measure was "set onions," as we call them; or, as they are called by some, "top onions." This was a bed 8 feet wide and 30 feet long. From this we gathered 13 gallons of the top onions; 11 gallons we sold at 80 cents per gallon, and 3 bushels of the root onions, which were put away to raise another crop. I have not written this for publication, but that you might urge upon Western farmers a better preparation of their garden ground.

The Cabbage Pest.—(*Pieris rapæ.*)

BY W. V. ANDREWS.

The butterfly *Pieris rapæ*, has become so common in certain localities, and is such a pest to farmers and gardeners, that it becomes a duty to offer a few words of warning to those not yet visited by it. Much may be done by persistent work at the caterpillars. From a patch of cabbage plants, about four yards square, I picked off over two hundred caterpillars, but, being unable to attend to the work continuously, left enough behind to devour the whole of the cabbage plants. But had everybody done as much as I did, what a difference in the number of *P. rapæ* would there now have been, so far as this locality is concerned! But, as I said before, the work must be persistently continued. It is one of the earliest of our butterflies, and brood after brood appears, up to September. And be it remembered that, although it prefers a nice little cabbage to almost anything, it does not consider itself bound to confine its ravages to that plant. Early radishes receive its attention, and in default of other food it does not refuse a little mignonette, of which fact our flower-beds bear ample evidence.

For those who have not seen it, I will give a brief description of the caterpillar. Full-grown, it is about one inch and a half in length, of a fine dark green. Sometimes a brassy line is visible down the back, and on the sides. Those on the sides, however, are generally broken up into spots, and none of them are ordinarily visible without close inspection. The pupa is green, with the usual protuberances, and is generally fastened to a fence, or other convenient place, by a silk thread thrown over the back. It remains about fourteen days in the pupa state, and then emerges to carry on its appointed task of reproducing its species.

In the butterfly state, as well as in the caterpillar state, it is one of the most assiduous of insects. By 7 o'clock in the morning it is well on the wing, and it continues its flight from flower to flower until late in the afternoon. It is useless to indulge in the hope that it may, in its butterfly state, be starved to death for want of food; for nothing comes amiss to it—it lives on Catnip, Boneset, everything in fact. But a patch of thistles is its paradise; and here, in Jersey, our farmers deal gently with the thistles. I have seen a patch of thistles, in flower, so thickly covered by *P. rapæ*, that, at a distance, the flowers looked to be strongly variegated with white. A near approach does not frighten them in the least; so if the farmer should choose to try his skill in the art of throwing a butterfly net, I know of no opportunity that will afford him a better chance of capturing his game.

And it should be remembered, that this is after all the most effectual way of going to work; for capturing one female butterfly is equivalent to the destruction of a great many caterpillars. It may be well to look out for the first appearance of this butterfly in localities not yet visited by it. It is a small white butterfly, about an inch and a half, or two inches, in the spread of the wing. The male has one black spot on the upper surface of the secondaries; the female has two. This is the most obvious difference. Both sexes have the top of the primaries of a brownish-black on the upper side, and a corresponding yellow spot on the under side. The under part of the secondaries is of a greenish-yellow. This description is sufficient for any ordinary observer; but it may not be unnecessary to say that there are varieties in which the whole of the ordinarily white portion is of a cream color.

It is almost useless to look for the egg of this insect, as it is difficult to detect, except by a great expenditure of time, but in the caterpillar, the pupa, and perfect state, it is easy to capture; and farmers and gardeners should assiduously endeavour to extirpate it, whenever and wherever found. It should be sought for in the caterpillar state when quite young, especially the second brood, which hatches out about the time the early cabbage is forming the heart; and it takes but a short time to enable the little sapper and miner to bury itself therein, and the plant is then unfit for market.

[In addition to the description of Mr. Andrews, we would refer the reader to the engravings of the insect in all its stages, given in the *Agriculturist* in Nov. 1870, page 422.—ED.]

The Robin—What to do with Him.

The robin is here with his mate, and a whole nest full of hungry young ones, just ready to fly. You heard his notes all through April and May, saluting the earliest dawn, bidding farewell to the twilight. True, it was not much of a song, but it was the best he had, and always at your service. You saw his house-building in the old apple-tree, or in the corner of the fence, most industriously carried on from the day that he wedded his mate. There was nothing very charming in the architecture, not much evidence in it of progress toward a higher type of bird life, as we compare it with the robin nests of two hundred and fifty years ago, but it was good, honest work, the best he knew, and it sheltered his young. Each one of those fledglings in the nest has eaten many times his weight of insects in the few brief weeks of his growth. If you have watched the operations of that household, you have seen the unwearied industry of the parent birds in procuring food for their young. It is nearly all animal food that they have consumed, taken from your blossoming fruit-trees and vines, just at a time when they were being most injured. They have had their fill of worms and bugs, and when they get out of the nest they will change their diet a little, and help themselves to your currants, cherries, raspberries, and grapes. All the small fruits will suffer, and some of the vegetables. And as the robin is a connoiseur, he will take the best of your fruits. You cannot blame him for the refinement and delicacy of his taste. It will do no good to cultivate foxgrapes for him: he will not touch one of them until the best grapes are all gone. If you get any fruit in perfect order, you must put netting over it, or in some way make it a physical impossibility for the robin to touch it. We have tried the theory of raising fruit enough for yourself and the robins too. It is all theory and moonshine. There is no one to divide the spoil, and the birds, by virtue of their early rising, are always masters of the situation. It is very nice and humane to spare the birds for the sake of the insects they devour, and the possibilities of fruit they promise you. But what is the use of raising fruit if the birds take it all? So far as the reward of our labor is concerned, we are not profited at all by the slaughter of the insects. We have been studying Mr. Bergh, and think there is about as much cruelty to brutes in killing insects, as in killing birds. Only think of the hopes crushed in worm households by cockrobin and his mate in catering for their young Will there not be a sort of poetic justice when he and his brood are thrust into a pot-pie, for the benefit of the lord of creation? We want to keep Nature in healthful balance. We err when we spare all the birds, and pay for our fault in the loss of all our fruit. We may safely kill so many birds as beasts and birds of prey would take, if they were not sheltered by our care.

MULCHING.—After the spring rains are over and the hot days have come, the newly-planted fruit and ornamental trees, as well as flowering shrubs and small fruits, feel the effects of heat and drouth. Though they may have made a good start in the spring, the growth flags in these hot June days, and while the well-established plants do not mind it so much, those set this season are evidently suffering. Only those who have tried it know the benefits of mulching. After cultivating or otherwise stirring the soil, put around the trees or shrubs a good covering of straw, bog, or salt hay, or any similar material. Not a handful, but a good generous covering, to extend as far or farther than the roots of the tree or shrub are likely to spread. This will prevent evaporation, keep the soil mellow, and smother the weeds. Currants and gooseberries are, in particular, benefited by this treatment, and there is scarcely any plant that will not flourish all the better for it.

Sweet-Potatoes.

The first week in June is quite early enough to set out sweet-potatoes in northern localities. Where but few are grown, it is much cheaper and easier to buy the plants than it is to start them. They carry readily by express. In preparing the soil, put upon the level surface a strip of fine manure a foot wide, and turn two furrows over it to form a ridge. Dress up the ridge with the spade, and set the plants about 15 inches apart. Unless the soil is moist, water the holes before setting the plants, which should be set well down, so that the stalk of the first leaf is covered. Press the soil firmly around the plants: much of the success will depend upon this. Should the tops wilt and dry up, a new shoot will spring up if the plant has been set deep enough. The sides of the ridges should be kept free of weeds by the proper use of the rake. The vines will soon get so large as to smother most of the weeds.

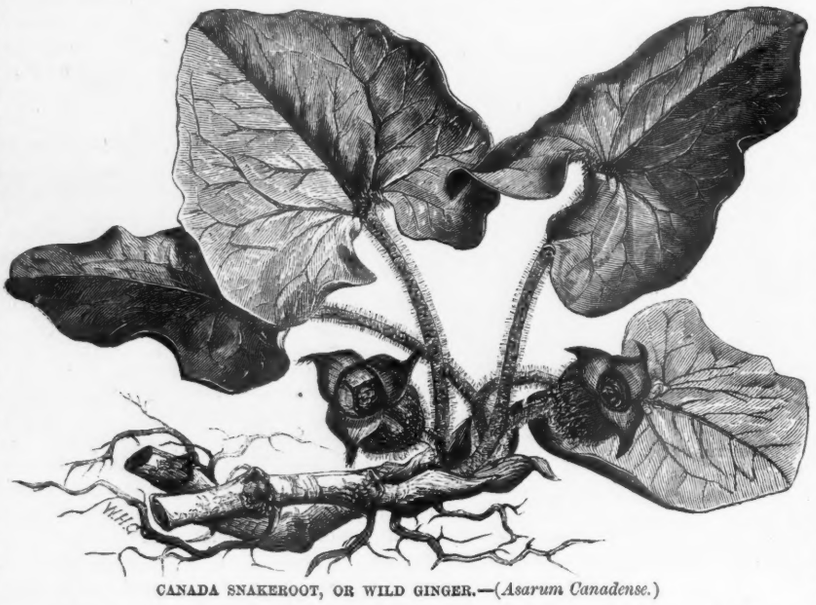
Essential Implements.

There are two implements that we regard as essential to the successful and satisfactory cultivation of the family garden, whether it contain vegetables or flowers. These are a sharp steel-rake, and a lance-headed, or bayonet-hoe. If the rake be used in time, and sufficiently often, other weed-killing implements will seldom be called into use. The most serious and obstinate of weeds, even the Canada thistle, if taken in its infancy, can be killed as easily as any other plant. Let a few days pass, and it must be hoed up, and at the end of a few weeks it can with difficulty be up-rooted by the spade. Use the rake frequently. The lance-head, or bayonet-hoe, are much alike in shape, but we prefer the first-named, which is a triangular plate of steel attached to a suitable shank and handle. For weeding, loosening the soil around plants, opening drills to sow seed, and many other purposes, it is an implement that we find to be in constant requisition.

Canada Snakeroot, or Wild Ginger.

(*Asarum Canadense.*)

In the rich woods of the northern hill-sides there will often be seen, in spring, patches of broad, kidney-shaped leaves, which are soft with down, and have a pleasing tender green. The careless observer would not notice that the plant had a flower, so completely is it concealed by its position close to the earth and the protecting leaves. If we pull up the plant, it is found to have a creeping root-stock or underground stem, which bears the leaves in pairs, and between each pair of leaves, upon a short stalk, a flower of such odd appearance that one is at first in doubt whether it is a flower or not. The flower has no petals, but the bell-shaped calyx has three spreading, pointed lobes, which, on the inside, are of a peculiar purplish-brown color. The engraving represents the plant of about the size it is at the time of flowering, but later in the season, the leaves increase much in size and become more robust. The root-stock, or root, is very aromatic and pungent to the taste, and is sometimes, as one of its common names indicates, used as a substitute for ginger. It is somewhat employed medicinally, having the general properties of aromatic stimulants. The species here noticed is *Asarum Canadense;* there are two others, found in Virginia and southward, which differ in the shape of the leaves and some other characters, but possess



CANADA SNAKEROOT, OR WILD GINGER.—(*Asarum Canadense.*)

the same aromatic properties. Asarum is an ancient name for a similar plant. The Asarum belongs to the Birthwort Family (*Aristolochiaceæ*), the flowers of which are generally of a striking appearance. The Dutchman's Pipe—*Aristolochia Sipho*, is a common example of this family, and some exotic species of Aristolochia are among the curiosities, if not the ornaments, of choice green-house collections. Not only are the flowers of some of these grotesque in form and odd in their coloring, but some of them are among the largest known flowers. Humboldt mentions one which he met with in South America, the blossoms of which measured four feet in circumference, and which "the Indian children drew sportively upon their heads as caps." The term Snake-root is applied to several plants of this family, they having a reputation as cures for snake bites.

The Clustered Leucothoë.

A number of our native shrubs, which we used to know under the generic name of Andromeda, have for good botanical reasons been placed in other genera, and bear other names. The pretty shrub, which in our early botanizing days was Andromeda racemosa, is now *Leucothoë racemosa.* Leucothoë is a good enough name for a mythological female, but we must admit that we should prefer some other for the beautiful shrubs, which are now called Leucothoë. There are in the United States five species of Leucothoë, one of which is found north of Virginia—the *L. racemosa.* This species is found from Massachusetts southward, and though not classed among the rare plants, we do not recollect to have ever seen it abundant. It is a shrub from four to six feet high, and, when out of flower, has much the aspect of a huckleberry bush. Its flowers, which appear in May and June, are borne in racemes three or four inches long, which are situated at the ends of the branches. The flowers are pure white, cylindrical and contracted at the mouth; they are arranged with great regularity, are all turned downward, and have been likened in appearance to rows of teeth. The shrub, when in bloom, presents an attractive appearance, and the flowers are pleasantly fragrant—qualities that give it a stronger claim to a place in the garden than many exotics present. Its cultivation is easy, and, like many other plants that naturally grow in moist localities, it will flourish in common garden soil. The engraving gives a flower cluster or raceme, and the leaves of the natural size.

CLUSTERED LEUCOTHOË.—(*Leucothoë racemosa.*)

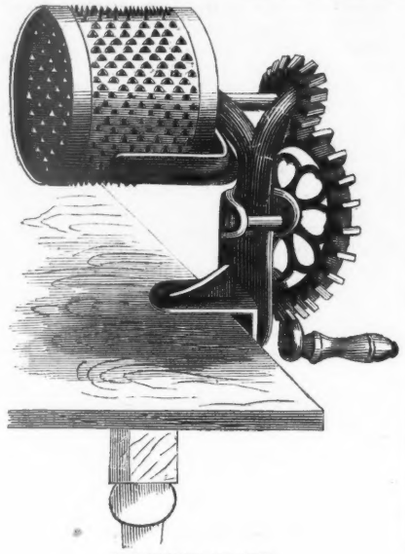
"HARDY" PEAR STOCKS.—"Rustic," an Iowa correspondent, writes that the peddlers in his state do not sell dwarf pear-trees grafted on quince stocks, as they have proved too tender for the climate, but they can furnish them upon Sycamore, Maple, or White Elm-stocks. He asks, "Are such trees raised for sale, and if so, are they good for anything?"—We do not know what a tree peddler might do, save tell the truth, but no one else, so far as our knowledge goes, ever saw a pear growing upon either of the above named stocks. The humbug is an old one. Grafting succeeds only with nearly related resuscitated plants.

THE HOUSEHOLD.

☞ *(For other Household Items, see "Basket" pages.)*

A Revolving Grater.

We have seen the pickle-venders in the market prepare horse-radish by means of a large revolving grater, moved by a treadle, and have wondered why no one had invented a small revolving grater for family use. Some one has done it. We were a few days ago looking through the house-furnishing stock of our neighbor, J. H. Baldwin, in Murray-street, in search of new household appliances, and there stood the very thing we had been long looking for—a revolving grater. The grater itself is of



REVOLVING GRATER.

tin, with the teeth made of a triangular form, and well adapted for cutting. It is fixed upon a stand, which may be readily screwed to the kitchen table, and is moved by multiplying cog-wheels. This grater will be found handy not only for horse-radish, but for grating cheese, carrots, crackers, or any similar thing that it is desired to reduce to the form of coarse powder.

Home Topics.

BY FAITH ROCHESTER.

THE BABY'S "SECOND SUMMER."—The little one is teething; and unless it has a strong constitution, and proper food, clothing, and attention, it is often very peevish, and shows symptoms of illness that call for careful nursing.

Its bowels will probably be "loose," and that is all right, provided this looseness does not become downright diarrhœa, or take on a dysenteric appearance. Constipation is more dangerous than simple looseness—more likely to be accompanied by convulsions or diseases of the head. To check a diarrhœa suddenly, may throw the disturbance to the head, and cause a malady more dangerous and difficult to reach. I have invariably found that an injection of cool (not shockingly cold) water, immediately following every passage of the bowels *that had a slimy appearance*, mitigated this symptom of dysentery. It simply washes and cools the lining of the intestine which the slime shows to be morbidly irritated. If farther treatment seems necessary to prevent dysentery, wrap a bandage of double coarse linen (a folded towel will do,) wrung out of cool water, around the little one's abdomen, and over this secure a doubled dry towel. Wet this compress again before it becomes dry, unless the child is sleeping. If you would prevent bowel diseases in children, be careful to keep their lower limbs warm. Of course nothing is more important than the diet, which should be plain and nutritious, and given as regularly as possible. Nature calls for bone-making material, and the nursing mother's food or the food of the weaned baby should not be lacking in this element. Any food that requires much chewing is clearly improper for it.

If mothers are healthy, and are surrounded by intelligent friends who will guard them from overwork and excitement, it seems most safe for teething babies to depend mainly upon their mother's milk for nourishment; but many a case of *cholera infantum* has resulted from some severe physical strain or mental agitation of the mother; and because of this intimate connection between mother and child, it is, perhaps, best, that a teething child should not be too dependent upon the breast. A watchful mother can refuse to nurse her babe for several hours after any unavoidable excitement, drawing off the milk by artificial means and giving her child more wholesome food. My heart aches as I write this, because our race is still in such ignorance and wickedness as to make it almost impossible for mothers to give their babes a fair start in life, in respect to health and happy temperament.

It is not uncommon for teething children to suffer great distress just before a passage of urine, and mothers are sometimes in entire ignorance of the cause of their cries. If the writhing and crying ceases after this discharge, there is little doubt in respect to the seat of pain. For this I know nothing better (and in all this matter I speak from experience as well as inquiry) than warm sitz-baths. If the child is accustomed to wake in the night with this distress, try the warm bath before putting it to bed. Simply to immerse the feet in warm water and hold them there a few minutes, afterward drying them and guarding them from cold, is often sufficient to prevent this trouble returning. Water that feels only warm to your hand may be very hot for tender little feet. As children go, in these degenerate days, the mother of a teething child has almost constant work and anxiety night and day, in the simple care of her child, and should be relieved from other labors, and encouraged to take needed rest and out-door exercise. If people were wise just here—in the case of young children *and the mothers of young children*—statistics would show a much smaller proportion of deaths of infants under three years of age. At present not half the human race lives beyond the age of five.

TWO BOOKS FOR PARENTS AND TEACHERS.—I thought when I read the essay at the back of Miss Youmans' "First Book of Botany," that I should like to put it into the hands of every thinking parent and teacher of children. Her views of the education of children seem sound and sensible. She justly remarks in speaking of the importance of cultivating the observing faculties, "To postpone this, is to defeat it." For after the intellect once gets started in the way of "learning by rote" and accepting the "say so" of the books or teacher, its free development becomes almost impossible.

My own late experience makes me strong in the belief that Botany is one of the best things possible for cultivating the awakening faculties of a child, if taught very gradually and always as a pleasure to the child, never as a task, or when its heart is set on something else. But I think it has already been too long postponed—this early cultivation—if delayed until a child is old enough to make schedules such as Miss Youmans advises. This seems an excellent method for children who are old enough to read and write, but I wish Miss Youmans' book might be in every family as a guide for the older members in their chats with the three-year-old members. There is no hint in this excellent essay that its author was acquainted with the Kindergarten at the time of writing, but evidently her own observation and reflection had led her to many of the same conclusions that influenced Froebel, the inventor of the Kindergarten system.

Mrs. Horace Mann's "Moral Culture of Infancy"—a series of letters written to a friend more than twenty years ago, and published in the same volume with Miss Peabody's "Kindergarten Guide," shows how her experience as a teacher led her to the same conclusions. She speaks of it as a groping attempt on her part after the Kindergarten. As a mother, I could not afford to be without this book, and I think we should have more careful and conscientious teachers, if it was circulated among them. Miss Peabody's "Kindergarten Guide" will give any one curious upon the subject, the best information of any work I know of (Weibe's "Paradise of Childhood" excepted) in respect to the Kindergarten. Her "Guide" costs a dollar. Weibe's book costs three dollars.

WHAT WILL THE KINDERGARTEN DO FOR US?—It is a "garden" for little children, between three and seven years old, to grow in. Instead of a teacher or instructor to repress the natural activities of childhood while endeavoring to pour knowledge into the youthful mind, the little ones have a "Gärtner" (gardener) to keep the soil of this world's influences loose and genial about them, to see that all have a fair chance to be happy in the sunshine of love and congenial employment, to sprinkle and nourish with words fitly spoken the tender germs of the intellect and affection. The great principle of the Kindergarten is "to educate *by directing the natural activities.*" Ignorant and heedless persons cannot do this, and carefully trained "Gärtners" are absolutely necessary to conduct Kindergarten.

I would describe here the different occupations of the Kindergarten, if sure that I had not already done so in the previous article. The paper which will contain it (editors and publishers permitting) has not yet come to hand. At present I will only try to answer briefly the question proposed above. The Kindergarten is the only safe and reasonable substitute for constant wise parental care, that we can see at present. No mother can give her child constant care if she has more than one child, or any other duties beyond its care. Even then the Kindergarten is better for the child, during the three hours of its daily session, than a mother's continual presence. Children over three years of age absolutely *need*, for their most healthy development, companions of their own age. But we cannot turn them loose into the street. The ordinary primary school will not do for children so young, and no book-lessons can take the place of Kindergarten culture. In the Kindergarten no books are used, except for the pictures. All the employments are actual "plays" to the child, but so well ordered, that they afford just the gradual and genial discipline best adapted for the early culture of the physical, mental, and moral powers.

The children "play" with blocks, or weave slats together, or cut paper into various forms, but instead of an aimless play, and useless, except in the way of diversion, they are gently led to build and cut and mark and mold with method and exactness. Unconsciously they learn to use correct terms and good language. Their eyes grow observant and their fingers skillful. When once we get free Kindergartens well started, we shall begin to see how we are to be supplied with good and faithful workers in every department of labor and art.

More than this will the Kindergarten do for us, but we cannot say more on the subject at present.

Portable Clothes-Drying Posts.

A correspondent of the *American Agriculturist* in this city, who has a small place in the country, is annoyed at seeing posts, for tying the clothes-lines to, standing permanently on the lawn. He asks if there is any invention of a movable character that will obviate the difficulty?—There are several patented contrivances of this kind manufactured. We have had one in use for some years that answers a good purpose, but do not recollect the name of the manufacturer. The difficulty, however, can be easily overcome by having movable posts, that can be placed in position for a few hours, when needed, and then taken down and laid away till next washing day. We give a description of such a plan that has been used for some years, and found to answer the purpose.

Fig. 1.

First make a box (fig. 1) of 1½ or 2-inch plank, 18 inches long, 7 inches square at the top, and 6 at

Fig. 2.—PLANK TO HOLD FIG. 1.

the bottom; next get a plank about 3 feet long, 2 or 3 inches thick, and 12 or 14 inches wide (fig. 2), in which cut a square hole which shall tightly fit the box at the dotted line, *a a;* next make a wooden stopper (fig. 3) to fit the top of the box (fig. 1); nail the box firmly into the plank (fig. 2), and plant them firmly in the ground, so that the top of the box is just level with the surface, ramming the whole well down. Make the end of your clothes-post to fit the socket (fig. 1), and,

Fig. 3.

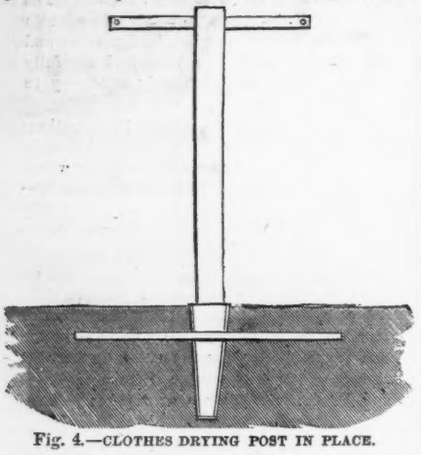


Fig. 4.—CLOTHES DRYING POST IN PLACE.

when you remove it, be careful to cover the hole with the stopper. Fig. 4 shows a section of the whole when fixed for use.

Hints on Canning Fruit.

BY ESTELLE EDGERTON.

The season when fruit will be plenty is fast approaching, and those housekeepers who have seen how much their canned fruit was enjoyed the last winter, will be making calculations to put up a large supply the present summer. There is nothing healthier, and really, hardly anything cheaper, than canned fruit.

It may seem unnecessary to those who are already adepts at the art to write anything on this subject; but I can assure such, that there are hundreds of bushels of fruit spoiled every year in this town alone.

A lady not long since was telling me that last fall she put up three baskets of as handsome peaches as were ever gathered, and every bottle was spoiled. I constantly hear the ladies talking about their spoiled fruit. There is another remark I often hear, and which seems absurd to me. It is this: "My fruit always white-molds, and I think it improves it." There *is* a thick leathery white mold, which often forms on the top of the fruit, and which can be removed whole without affecting, apparently, the flavor of the fruit; but it is not desirable to have even this sort of mold. It would be out of the question to send such bottles to a long distance, as the mold would be spread all over the fruit, if it did not impart any unpleasant flavor. There is such a thing as having bottled fruit without any mold whatever. I think the reason white mold forms, is, that the lid of the can is not applied soon enough, and many ladies consider this as part of the process. Only yesterday a friend told me that she always waited three or four minutes after the fruit was in the bottle before putting on the lid. "It lets out the air," she said. I looked surprised. "You know there are always bubbles of air that have to come up." "Oh, yes!" I said, "I know; but always run a knife quickly down the inside, and that brings them up." The quicker the lid is applied, the better, and it should not be disturbed until you want to use the fruit.

In regard to the air-bubbles, which often form while the bottle is filling, a little care will obviate the difficulty. In putting the fruit into the bottle, do not pour in such a way as to close the whole mouth of the bottle, because that prevents the escape of the air; but rather let the fruit slide gently down the side of the bottle. It can be done just as quickly this way as the other.

The secret of having bottled fruit keep, is to have a perfectly air-tight cover, and to be sure that the fruit perfectly boils all throughout, before putting it into the bottles, and then to be quick about putting on the cover, and letting the cover alone, until you want to use the contents of the bottle.

It is not necessary to let out the steam or air, after the cover is on. Do not place a string under the rubber for this purpose. Do not insert a penknife under the rubber (according to some directions) to let out air (I know a lady that learned this lesson after her peaches had all fermented). It is not necessary to bury the bottles in the earth, or to have a dark vault made in the cellar for the purpose. Mine keep perfectly, without mold, on a shelf in a rather light cellar. If you bottle your fruit in the right way, it will keep almost anywhere, but by the stove; if you don't *do* it right, and let in the air with a knife, or some other way, it won't keep, no matter where you put it. Of course, if you have not done it right, it will keep longer in a dark, cold place, but it will succumb to the atmosphere in the end. Bottled fruit put up in a proper manner will keep for years, if desired. I had some splendid peaches at a friend's the other evening, and she said she did not know whether they were two or three years old. But she *knew* they were not last year's, for she did not put up any, as she had used up all her empty bottles for cherries, plums, raspberries, etc.; and as she had several bottles of peaches on hand, she did not think it necessary to buy more bottles for a fresh supply.

GREEN CURRANTS—TO BOTTLE.—These are nice for pies, and many housekeepers put up a large quantity. Strip them from the stems. Allow six ounces of sugar to the pound of fruit, or about one pound of sugar to three pounds of currants. Put a layer of sugar and currants in the kettle until two-thirds full; set on back of stove, or in the oven, until the sugar melts and the juice starts. Now let them come to a boil, stew them awhile, if you wish, or bottle as quickly as possible; they must be boiling when bottled. Common, small-mouthed bottles will do. The corks should be cut off smooth and even with the glass, and waxed neatly.

GREEN GOOSEBERRIES—TO BOTTLE.—Remove the stems and blows, and allow about a half pound of sugar to a pound of berries. If you wish them whole, you will need a little water. Put a layer of sugar and gooseberries, and so on, and then water nearly to cover them, but not quite. Put the fruit into the bottles by the teacupful. Take them from the kettle solid in the cup, but allow some of the boiling juice, or they will chill. Have the bottle full of the berries, and then cover with whatever quantity of the boiling juice is necessary. If you want them made into jam, let them stew until a pulp is formed, and use no water. Ripe gooseberries are better made into a jam; a little less sugar than for the green ones is required.

RHUBARB, OR PIE-PLANT—TO BOTTLE. — Skin young and tender stems, and cut them into proper lengths. Allow a half pound of sugar (brown will do) to the pound of fruit. Stew it for some time, if you wish, or simply bring it to a boil, and bottle, sealing as quickly as possible.

TO BOTTLE CHERRIES.—I always stone the red sour pie-cherries; the large white look and taste better with the stone left in. Some persons consider the black Tartarian an unsuitable fruit to bottle. I put up a quantity the past year: they kept well and were delicious. I did some with stones, and some without. You may put them up with or without sugar. My way is this: To one pound of sweet cherries allow one-quarter pound of white sugar, and a little water. Bring to a perfect boil, and bottle.

PIE-CHERRIES—TO BOTTLE.—Stone them, allowing the juice to drop with the cherries. To a pound of fruit add nearly or quite a half pound of brown sugar. Let them stew until the sugar is reduced to a syrup, or until they look a little glazed. Now bring to a lively boil, and they are ready to bottle. Remember the invariable rule for all bottled fruit: seal quickly, while boiling hot.

STRAWBERRIES—TO BOTTLE. — Let them be as fresh as possible. Pick over, and reject every one at all decayed. Wash thoroughly before taking off the stems. To every pound of berries allow three ounces of white sugar; use a porcelain or brass kettle. Put layers of sugar and fruit; no water, until you have sufficient in the kettle. Put them on a slow fire, and stir them constantly until reduced to a jam. Let them stew until the jam looks glazed, then boil up and bottle. If you wish them whole, take the juice drained from the berries, and the sugar, no water, and boil well together. Then add the berries, and as soon as the fruit boils, bottle. Strawberries, done whole, change color badly, besides the husks from the seeds show unpleasantly in the syrup. I prefer to make a jam of them.

RED RASPBERRIES — TO BOTTLE. — One short quarter pound to a good pound of fruit; put in layers in the kettle, and reduced to a jam; stewed awhile, brought to a boil, and bottled. Excellent.

BLACK RASPBERRIES.—The same as red. They make delicious pies.

RED RASPBERRY VINEGAR.—Put a quart of good vinegar over two quarts of berries. Let them stand over night, strain, and pour the juice over two more quarts of berries; stand over night, then strain again. To every pint of juice allow a pound of white sugar. Let it come gently to a boil, and bottle for use in small-necked bottles. One tablespoonful to a glass of ice-water makes a refreshing summer beverage, and is also excellent for invalids.

Washing Dishes.—Mrs. E. Ward, Knox Co., Ill., 1871, writes: "In your March number, Mrs. W. Y. gives her process of washing dishes, which I approve of, except the pouring of hot water upon the soap. I like to put it in after I cool the water. Young people are apt to waste it in hot water. I wish to say to Mrs. W. Y., that I have a process for washing dishes which *I* always follow, and teach it wherever I can. After removing the bits from the dishes with a knife, I have about two quarts of hot water in a small pan; I then take my wisp of broom-corn, which I always have near my dish-pans, holding the dish with the left hand, not putting it in the water, but cleansing it with the wisp from all bits and grease, which are very objectionable to me, even in my large pan of soapy water. I must add here, that these wisps (which are made of broom-corn, tied into bundles as large as a broom-stick, or larger, by two strong cords near the coarse ends, which form a handle) are indispensable in cleaning kettles and frying-pans. I never allow myself to be without two or three, handy. I find them good in cleaning window-sash. In fact, if a housekeeper would use them one month, she would wonder how she ever lived so long without such a convenience.

Corn Bread.—2 teacups of sweet milk, 1 egg, 1½ teacups wheat flour, 2 teacups Indian meal, 2 tablespoonfuls of sugar, a little salt, 4 teaspoonfuls of Cream Tartar put on with flour, 2 teaspoonfuls of soda dissolved in warm water; add this the last thing. Bake in gem pans in a quick oven.

Carrie's Pudding. By "W."—Cut any nice stale cake into squares or thick slices, and pour over it a soft boiled custard, flavored with lemon or vanilla. Serve when cold.

A Refreshing Summer Drink.—A friend states that the most thirst-quenching drink that he found during the unusually hot summer was strong cold black tea, to which lemon juice and sugar were added in quantities to suit the taste. We have often used cold or iced tea, and found it an exceedingly grateful summer beverage.

BOYS & GIRLS' COLUMNS.

Fishing.

BY "CARLETON."

I need not ask the boys if they ever have been a-fishing: of course they have. If there is a lad anywhere in the United States who never dropped a hook and line into the water, and felt a nibble, and pulled up a perch or horned pout, he don't know what fun is. I have a vivid remembrance of the first time I tried my hand: it was not with a hook and line, however, but with a spear. It was in the spring of the year, when the birds were singing, the frogs peeping, and the suckers were beginning to make their appearance in the meadow brook, and my elder brothers were getting their billets of pitch wood in shape for a grand spearing excursion on the first calm night. They talked about it so much that I caught the fever, and sallied out one sunny afternoon in May, with a one-tined spear, which I had made myself, by driving a nail into a broom handle and filing the nail to a sharp point. I hastened down to the brook side, but saw no suckers nor perch nor pout. There were frogs by the score, swelling out their throats and winking at me with their great goggle eyes. "You won't wink at me in that way much longer," I said, as I let my spear drive at a great pot-bellied fellow, who leaped into the water *ker-chug*, and I followed him *ker-splash!* The bank was slippery, and I had not calculated the distance carefully, and unexpectedly found myself up to my arms in mud and water. I crawled up the bank and went home, thinking that there wasn't much fun in spearing.

I can remember the time when I caught my first fish as plainly as if it were only yesterday. I see the pond, although it is far away; the water is still; there is not a ripple upon the calm surface; the boat lies motionless. I have a little alder fishing pole, and there is a squirming mud worm on my hook. Ha! there is a nibble. An electric thrill runs through me, from the ends of my fingers to the soles of my feet. There is a heavier pull.

"O ——o, wasn't that a big one?" The O is several seconds long. Another pull, and the little alder pole bends with the weight. "I've got him! I've got him!" and the echoes come back from the wooded shore—"got him."

"O ——o, ain't he a *lunker?*" You need not look into the dictionary to see whether or not that is a choice word; but whether in the dictionary or not, the people of my native place used it when they wanted to describe a big thing. Are you impatient to know how large the "lunker" was? Well, it was a shiner, fully four inches long!

I think that I hear a haw-haw-haw from all the boys from Maine to Nebraska. Laugh away my lads, for I love to hear a good, jolly laugh from a wide-awake boy, even if it is at my expense. It is sweeter than anything else I know of, except the laughter of the girls. I like that a little better.

I have caught many fish since then that weighed more than that shiner, but I never have caught a fish so big—one that seemed so big, I mean. I caught that day a half-dozen perch and a pout, but I shall never again experience a thrill of pleasure like that which flashed through me when I pulled up that shiner. I have seen whales in the Atlantic and in the Pacific Oceans since then that were puffing, blowing, and spouting—one that was forty feet long, but he did not seem to be near so large as that first shiner. How proudly I walked home from the pond, carrying my string of fish, running ahead to let the folks know what I had done. "See there! O ——o, ain't they big ones?" I do not believe that Wellington at Waterloo, or General Grant at Appomattox, felt prouder than I on that eventful day, when I caught one shiner, three flat sides, six perch, and a pout. It was like capturing the "horse, foot, and dragoons" that we read about in the war books.

I have fished many times since then, and have caught pickerel, pouts, eels, cod-fish, and mackerel, and once I caught a great turtle in a funny way—by the tail with my hands. I was in Minnesota, on a beautiful lake, in a row-boat, with a long line trailing from the stem, trolling for pickerel, and was pulling them in one after another—great fellows with wide mouths, and voracious jaws, that made the water fly when they took the hook. A young Norwegian was rowing the boat, and we were gliding gaily over the lake, when suddenly I saw something black floating on the water, and as we came nearer, discovered that it was a great turtle, taking a morning nap. He was lying on his back, but waked up suddenly, flopped over with his face downward, and made a dive for the bottom; then, as if only half awake, and not knowing what he was about, he rose slowly to the surface. I could see him rising. He was a monster—an old settler—so old that his back was all covered with green moss like the shingles on an old building that has braved the storms of a hundred years.

"We'll have him yet," I whispered to the boatman, who worked the oars noiselessly, and sent the boat stern foremost toward the spot. I looked down into the water and saw the old fellow slowly rising. Up—up—up—he came.

"One more stroke," I said, and the boat shoots ahead to the very spot. He is at the surface: I grab him by the tail, and lift with all my might. The boat goes over, but a quick backward spring saves it from turning bottom-side up. Another lift, and he is mine. He is in the boat, flopping and floundering. The boat is half filled with water, and the turtle is making at me with his jaws wide open, hissing, snapping, snarling, digging his great scaly claws into the side of the boat. The frightened Norwegian is dancing about at the other end, ready to leap overboard. It is an exciting moment. Let the turtle but once get his jaws hold of my flesh, and it would take an iron bar to open them again.

He is making at me. I seize an oar, for defence. I must whirl him upon his back, and then I can master him. He bites the wood into splinters, in a twinkling. But at last I have him on his back, the oar upon him, the boat-chain around his legs, and so with our prisoner snapping and hissing me, work our way to the shore, and find, when we weigh him, that he is a forty-eight-pounder—one of the largest fresh-water turtles probably that ever were caught. That was fun worth having, and the eating in our camp at night was worth having also. And here let me give you a bit of advice in regard to turtle-catching—always grab them by the tail!

Aunt Sue's Puzzle-Box.

Instead of giving one prize for the longest list of correct answers, I shall give four sets of anagram-letters, to be drawn by lot, for the solution of all the anagrams. I receive a great many letters containing answers only to the anagrams. I should like to reward each one, but that would be a little too much of an undertaking. So I shall draw four names for this month's anagrams, and give to each one drawn, a prize. Answers to these must reach me before the first of July. Those received later will not be credited.

Address AUNT SUE, Box 111, P. O., Brooklyn, N. Y.

ANAGRAMS.

1. Sure bond.
2. Comet is dated.
3. A fed horse.
4. Is soda, gin?
5. O! bail a ring.
6. C. torn side.
7. I can apples.
8. Never no wit.
9. O! go finger.
10. Featherer.

WORDS ENIGMATICALLY EXPRESSED.

11. What vessel? TEMPY.
12. A warm letter.
13. Greasy pronoun.
14. Observe an instrument with teeth.
15. A foolish weight. HOPPER.

MULTUM IN PARVO.

16. Out of what one pronoun can you get nine pronouns inclusive?

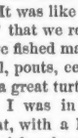
DIAMOND CROSS PUZZLE.

17. 1. The capitol of Norway. 2. A fish. 3. A cutter. 4. A city. 5. A color. 6. Great anger. 7. The tail of a bird. The center letters, perpendicular, will name a great city, and the center letters, horizontal, will give the name of the State it is in. ADOLPH M. NAGLE.

18. To the nickname of a great statesman add a common French word, and a wild beast, and make a plant valued by some for its medicinal properties. M. RICHARDSON.

PI.

19. Opch, rafe, capee dan trisef
Kame pu hist gedlant bew fo file. A. R.

20.  Lay down 24 matches, forming 9 squares, as in the accompanying diagram. Now, take away 8 of the matches, without displacing the rest, and leave two perfect squares.

ALPHABETICAL ARITHMETIC.

The following is a simple sum in division; letters are substituted for figures:

21.

ENP) DIEOA (GEP
NTG

ODO
OME

GGA
ENP

OM

CHARADE.

22. My first is a vehicle, my second the nationality of its driver, my whole the casing of the room he lives in. TEMPY.

RIDDLE.

23. There are two nicknames, both well known,
One of sister, one of brother
Place a vowel before each one
(Each vowel, mind, unlike the other),
And lo! a wondrous organ,—human,
Can our puzzlers guess the true one? TEMPY.

410. *Illustrated Rebus.*—A saying which many unfortunately find true.

PUZZLE.

Find the word out of which the following sentence was made:

24. A modern Matron had on a Roman garment, and tore the hem on a thorn.

ANSWERS TO PUZZLES IN THE APRIL NUMBER.

ANAGRAMS.—1. Innumerable. 2. Turmoil. 3. Imagined. 4. Universal. 5. Wearied. 6. Builders (this was often answered with "Rebuilds," which I credited as good). 7. Ransacked. 8. Retrospect (several young ones answered this—"Protecters," and then informed me that it should have been "—ors"). 9. Blemishes. 10. Entangle. 11. Black, white: brew, lash, alibi, currant, kayle. 12. Barbarous. 13. Taintless (J. A. B., and others send "nevertheless," which is equally correct and more elegant). 14. Microscope. 15. Intwine. 16. Farthing. 17. Figure. 18. (There was an error in this puzzle, so I shall republish it, amended.) 19. Share, hare. 20. Bear, ear. 21. Heel, eel. 22. Bass, ass. 23. Goat, oat. 24. Rice, ice. 25. Spike, pike, Ike. 26. Sea-lion. 27. Promise little and do much.—406. One ought to manage, arrange, and superintend all his own business.—407. Fort Wayne (four twain). (This Rebus has met with universal approval).

Correct answers to more or less of the puzzles have been sent by Willie Webster, M. St. John, Susie H., M. C. S., M. Soule, J. L. W., J. Corbett, F. W. H., N. Y.

411. *Illustrated Rebus.*—Words used by the weather-wise or otherwise.

H., J. E. S. D., A. A. M., C. A. S., S. L. D., W. Taylor, W. H. R., Laura E., M. T., O. A. G., M. C., W. H. & S. G. K., J. H. B., Gipsy Jane, M. B. C., C. H. K., R. B. E., J. W. L., Emma D., H. E. P., M. St. J., J. P., W. W. Y., H. P., E. M. H., L. E. M., L. S. G., M. M. M., Ainslee Bros., U. H. W., B. W. P., and J. B.

AUNT SUE'S NOTICES TO CORRESPONDENTS.

J. A. B. Some of those "proverbial" words, I think, might be considered obsolete.

H. H. CLARKE. Thanks for your puzzles, which are very good. It is quite a relief to not find any numerical enigmas nor cross-word enigmas among them. I should prefer giving the puzzlers your first item to square, rather than describe each word, if yo have no objection.

NEVVY. "Rich" and "pretty." Bless me! It must be some other party. But proceed to "cultivate," I'm willing. Give my love to your "mother" for the "sister's" sake.

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JUST HATCHED.—*Drawn and Engraved for the American Agriculturist.*

MAGGIE C. The idea of addressing your Auntie as "Dear Sir!"

MOCKING BIRD and JENNIE FOSTER. The way to find out "how to solve" any puzzle is to study the answer and the puzzle together.

BLUE BIRD thinks that HAUTBOY must subsist on "*stews* and *soups*;" perhaps that is what makes him such a "broth of a boy." I believe that is complimentary; if not, I take it all back.

ANDREW M. G. How you must enjoy having *earned* your paper, when many boys, who are not "cripples," don't earn their salt.

LILLIE S. GOTWALT. Can you tell me why young gentlemen who answer puzzles, like to sign young ladies' names?

B. W. P. The "prize" has been a gold pen, to gentlemen; but you will see a change in the prize programme with this number.

JOHN C. WATSON. Do you know how fortunate you are to have a mother who is willing and who has the time to enter into your amusements?

TOCCOA COZART. (Have we an Indian among us! Whence came such a name?) You are welcome to our "charmed circle." I cannot tell you "the age of my oldest correspondent," but I am proud to say that some of them are grandmothers and grandfathers. Some are so young that they print their little letters; and some younger yet get their sisters or other relative to write for them. One little chap, in his dictation, said: "*Tell Aunt Sue I falled in the water.*" I like to have the little ones make a household word of "Aunt Sue."

WILLIE S. OH. What is the matter, dear, with "Betrothal?" Suppose you look in your big dictionary and make your mind easy.

HAROLD FROTHINGHAM sends 258 words made from the word "valentines." Can any one make more words out of that one, or out of any other word of ten letters? I fancy they can. (He does not use the plurals except when they have a different signification.)

H. W. OTIS. Thanks for your puzzles and rebuses, so good, and so modestly presented.

HORACE MILLER. Did you receive your anagram letters?

MAGGIE D. C. Yes, dear, your answers were quite right as far as they went.

MT. VERNON. (No signature.) You must remember that the *Agriculturist* is issued long before its date.

Thanks for Puzzles, etc., to B. W. P., S. L. D., E. L. C., Aunt Molly, G. M. B., G. B. C., and W. W. Y.

THE PRIZE.

I have been very much exercised this month upon the question of who deserved the prize. First came S. L. Dimon, who answered all but Nos. 17 and 407; then Blue Bird, who misses 16 and 407; then Star and Crescent, who misses 27 and 406. Now come Lillie Streeper and John A. Boston, who both fail on 407; and now we have three who answer the whole list (leaving out No. 18, of course, as it was faulty). Nevvy, W. F. Curtiss, and O. B. Joyful. O. B. J. gives the original answer to No. 13, and I suppose I *might* decide that he wins the prize; but Nevvy and W. F. C. give "knotless," which is certainly unexceptionable. So I have concluded to give each one a gold pen, instead of drawing lots.

THE ANAGRAM PRIZE was drawn, from among fifty-two names, by Clara R. Taylor, Oakfield, Genesee Co., N. Y. I hope the pleasure that the other fifty-one took in solving the anagrams will compensate them for their trouble in writing the answers.

Just Hatched.

The above picture was made for you, Boys and Girls; but I wonder if any of you will be as much amused with it as I was when I first saw it. You may think it strange that one old enough to be your grandfather can find amusement in a picture for children. You must not suppose, that we old fellows are going to let you young ones have all the fun. Now, is not there something right funny in the expression of the little chick that is looking at the broken egg-shell. His countenance says as plainly as can be, "Did I come out of that?" "How did I ever get into "such a little brittle cell?" Poor chicky, he is only puzzling himself about that which has proved too much for much larger bipeds without bill and feathers. We daily hear and read of wonderful discoveries and mysterious things, but after all there is nothing more wonderful than the egg we eat at breakfast. If we examine it ever so closely, we find in it nothing like a chicken, and not the least sign of life. Yet twenty-one days under the hen brings out of the shapeless mass of white and yolk, bones, flesh, down, bill, and claws, and all these belonging to a living and moving thing! What are the most wonderful feats of magicians compared to this? The chick standing behind the first one has an air of wisdom. It was probably hatched some hours before the other, has seen something of the world, and looks with a feeling of contempt upon the later comer. It seems to me that I have seen something of this feeling shown by individuals who were not chickens. Then there is the little fellow that has picked his shell and has not come out. I wonder what it is thinking about. It evidently is not in a hurry to try the new world, the light of which has just come into its narrow dwelling. I think this not only a very pretty, but a suggestive picture, and I hope you will agree with—THE DOCTOR.

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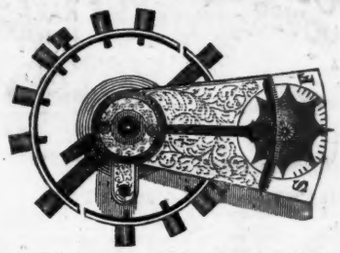

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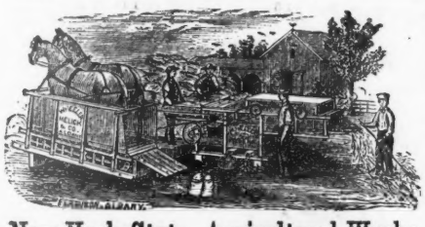

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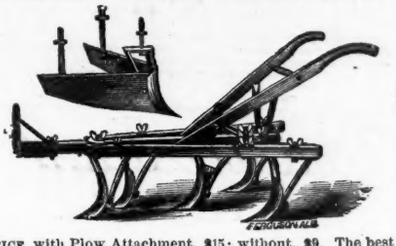

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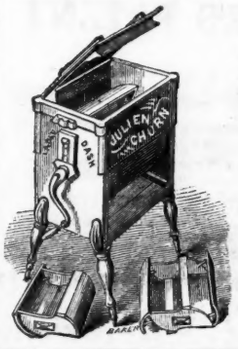

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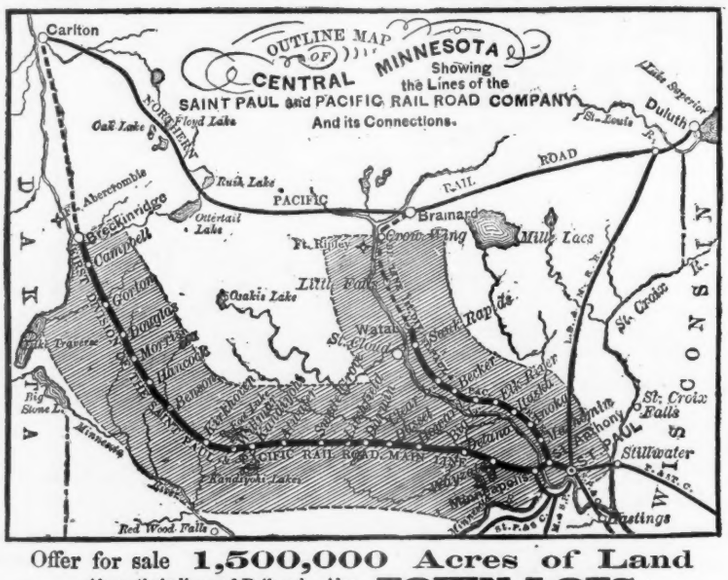

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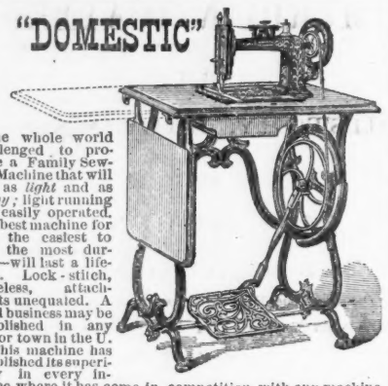

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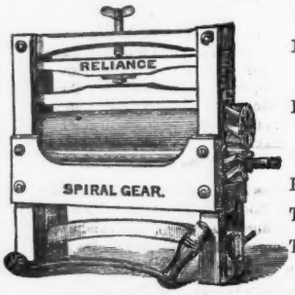

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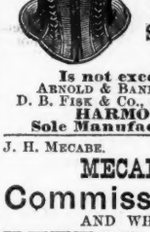

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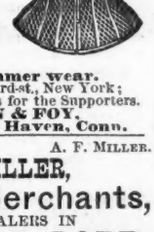

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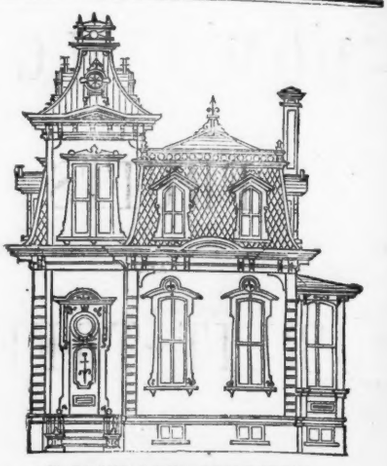

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